CITY OF Grand Junction COLORADO

Purchasing Division

ADDENDUM NO. 1

DATE: **April 10, 2018**
FROM: **City of Grand Junction Purchasing Division**
TO: **All Offerors**
RE: **2018 Sewer Line Replacement Project – Phase A**

Offerors responding to the above referenced solicitation are hereby instructed that the requirements have been clarified, modified, superseded and supplemented as to this date as hereinafter described.

Please make note of the following clarifications:

1. Replace the original Bid Schedule with the updated Bid Schedule that is attached to this Addendum. Several pay items have had their quantities changed.

2. Replace the construction plans with the updated construction plans that are attached to this Addendum.

3. *Question #1* – Will the project require the installation of sewer service stub-outs to the vacant lots along the IPE Holdings LLC properties (use to be the old Grand Junction Steel yard)?

   Answer – No, the project won't require sewer service stub-outs to be installed at this location.

4. *Question #2* – Will the City allow the use of fusible HDPE pipe for use with the pipe bursting segments?

   Answer – No, the City will not allow the use of fusible HDPE pipe to be used with the pipe bursting operations. Per this Addendum #1, the City will allow either 8-inch Fusible PVC pipe or 8-inch Certa-Lok (CertainTeed) Restrained Joint PVC pipe for the pipe bursting segments.

   Refer to the updated Special Provision section, within this Addendum #1, regarding alternative sewer pipe to be used with the pipe bursting operations.

5. *Question #3* – Will the Contractor have to maintain business access along Horizon Drive during sewer installation, and what will the City allow for the sewer that crosses Horizon Drive at a 90-degree angle?

   Answer – Refer to Special Condition 3.3.16 for the requirements pertaining to maintaining driveway access to both business and residential properties. Along Horizon Drive, a lot of the business properties have cross-connection flow and when a driveway access has to be temporarily closed for sewer installation, the other nearby driveway access locations will allow the public to get access to a certain business/property.

   Sewer work along Horizon Drive will need to happen during the daylight hours. Due to the high density of hotels along Horizon Drive, nighttime work will not be allowed.

   For the sewer installation across Horizon Drive (between manholes G1-271-043 to G1-271-041), the City wants the Contractor to install this segment of sewer pipe on a Saturday and/or Sunday when the traffic volumes along Horizon Drive are at their lowest. Typically, Sunday traffic volumes along Horizon Drive are pretty low.

The City will not allow the Contractor to detour vehicles around sewer installation work using adjacent private property on Horizon Drive.

6. *Question #4* – What information is known regarding the concrete alley pavement that has radiant heat piping installed at Munro Pump along South 9th Street?

   Answer – The City learned from Munro Pump that the radiant heat piping was installed by Alpine Construction Management several years ago. The concrete pavement within City right-of-way (ROW) does not have radiant heat piping in it and the concrete in the ROW is 8-inches thick. The radiant heated concrete starts at the ROW line and goes east. The radiant heated concrete is 6-inches thick, underneath the concrete there is a layer of 2-inch thick rigid Styrofoam insulation board, there is a reinforcing steel mat at mid-depth that is #4 rebar at 2-ft on center spacing each way, the radiant heat piping is 5/8" dia. flexible PVC pipe that is "burnt red" in color (exact pipe material is unknown at this time), and the radiant heat piping was installed in a looped pattern that goes north-south in direction.

   From the construction plans and the sewer inspection videos, the first two westerly sewer services for Munro Pump should be in the ROW and under the 8-inch thick concrete. The third (most east) sewer service line to Munro Pump should be underneath the radiant heated concrete pavement.

   Lastly, Alpine Construction Management mentioned that "Diamond Dowel Plates" were used at the cold joints instead of round dowel bars.

   Pay Item #45, Concrete Pavement (Radiant Heating) (6" Thick) has been updated and shall include the Contractor exposing the ends of the cut radiant heat piping, installing industry approved pipe couplings intended for radiant heat piping in concrete pavement, providing and installing new flexible PVC piping in a north-south loop pattern, placing 2-inch thick rigid Styrofoam insulation, and #4 rebar (black) at 2-ft spacing each way.

7. *Question #5* – Sheet 18, Manhole G1-271-041 is shown for replacement. Is this necessary?

   Answer – This manhole G1-271-041 on Horizon Drive is to remain in-place. The construction note calls out for the Contractor to connect the new PVC sewer pipe into this existing manhole.

UPDATES TO PROJECT SPECIAL PROVISIONS

SECTION 102 – MATERIALS

Specification *Section 02710 – Plastic Sewer Main*

- Include the following sub-section 2.02.a within Part 2 – Products:

PART 2 – PRODUCTS

2.02.a Restrained Joint PVC Pipe

1. MANUFACTURER REQUIREMENTS
   i. Restrained joint PVC pipe shall be manufactured in accordance with the dimensions, materials, quality control, and marking specifications found in AWWA C900-16. The PVC pipe and PVC coupling material shall conform to a minimum cell classification of 12454 as defined by ASTM D1784. **The length of pipe segments to be used is 40 foot sections.**

      Pipe joints shall meet the requirements of ASTM D3139. All products shall be supplied with isoprene/styrene-butadiene rubber blend gaskets. All gasket materials shall meet the requirements of ASTM F477.

2. SPECIFIED PIPE
   i. C-900/RJ Certa-Lok PVC Pressure Pipe, SDR-18. Diameter is 8-inch.

- In Section *3.01 – Pipe Installation*, include the following sub-section:

G. The plastic ribs that form on the Fusible PVC pipe at the pipe joints as a result of the pipe welding/fusion process shall be removed from the inside diameter of the fused Pipe after the pipe has been successfully installed and after

the pipe relaxation period. The Contractor shall use special tooling and equipment to travel through the fused PVC pipe and remove the plastic ribs from the inside of the pipe providing a smooth pipe interior.
The cost to remove the internal plastic ribs will not be paid for separately, but shall be included in the overall cost of the Project.

SECTION 104 – INSTALLATION OF PIPE AND APPURTENANCES

Update Specification *Section 02750 – Pipe Bursting* with the following information:

- Replace Sub-Section *1.02 – Contractor Qualifications* with the following:

1.02 CONTRACTOR QUALIFICATIONS:

The CONTRACTOR, or the subcontractor performing the work, shall be certified by the pipe bursting equipment manufacturer as a fully trained user of the pipe bursting equipment. Operation of the pipe bursting equipment shall be performed by trained personnel. The CONTRACTOR shall present evidence to prove to the satisfaction of the ENGINEER that he, or the subcontractor performing the work, has had previous experience in sewer pipe installation of this nature.

The pipe bursting CONTRACTOR shall have actively engaged in the installation of pipe using pipe bursting on at least two (2) pipe bursting projects in similar size and scope. The CONTRACTOR'S pipe bursting subcontractor shall keep the same supervisor on this Project until the pipe bursting installation on the project is satisfactorily completed.

Statement of Qualifications from two (2) past projects documenting pipe bursting experience shall include:

1. Project name and location, pipe sizes and lengths, Owner's name, address, telephone number, contact person, date and duration of work, additional information on the project, and contents handled by pipeline.
2. Supervisory field personnel and historical information of sewer pipe bursting experience. At least one of the field supervisors listed must be at the site when pipe bursting operations are in progress.

- Replace Sub-Section *1.04 – Submittals* with the following:

1.04 SUBMITTALS:

Submittals will be required for all qualifications, processes, and materials in accordance with this section. Submittals shall include all equipment proposed including that for both pipe bursting and butt-fusing of FPVC pipe. A detailed description of the complete process proposed for the replacement of the sewer main by pipe bursting shall also be submitted. This includes excavations, service locations and reconnections, maintaining the design sewer slope, and the process to upsize the space for the new pipe.

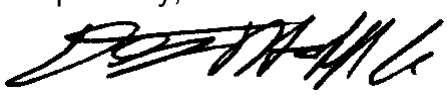
Specifically, submittals to be provided must include, but are not necessarily limited to the following:

A. Statement of Qualifications from two (2) past pipe bursting project similar in size and scope.
B. Detailed construction procedures and layout plans, including sequence of construction and how the CONTRACTOR will maintain the pipe slope between manhole locations.
C. Method of installing pipe to the pipe slope shown in the construction plans.
D. Method of locating and reconnecting service lines.
E. Method of establishing and utilizing the launching and receiving pits.
F. Method of bypassing pumping around any sewer bursting operation as necessary.
G. Information on all equipment proposed for pipe bursting operations.
H. Any other information required to provide a complete understanding of the proposed construction methods.

The original solicitation for the project noted above is amended as noted.

All other conditions of subject remain the same.

Respectfully,



Duane Hoff Jr., Senior Buyer
City of Grand Junction, Colorado

Bid Schedule: 2018 Sewerline Replacement Project - Phase A
ADDENDUM #1

Item No.	CDOT, City Ref.	Description	Quantity	Units	Unit Price	Total Price
1	108.2	4" Sewer Pipe Service (SDR-35 PVC) (Includes cost of connection to the existing sewer service line)	910.	Lin. Ft.	$ _____	$ _____
2	108.2	6" Gravity Sewer Pipe (SDR-35 PVC) (Includes cost of connection to the existing sewer pipe)	60.	Lin. Ft.	$ _____	$ _____
3	108.2	8" Gravity Sewer Pipe (SDR-35 PVC) (Includes cost of connection to the existing sewer pipe)	3,560.	Lin. Ft.	$ _____	$ _____
4	108.2	8" Gravity Sewer Pipe (Fusible PVC C-900 DR-18 or Certa-Lok C-900-Restrained Joint DR-18) (Includes Pipe-Bursting Installation Method)	1,170.	Lin. Ft.	$ _____	$ _____
5	108.2	10" Gravity Sewer Pipe (SDR-35 PVC) (Includes cost of connection to the existing sewer pipe)	815.	Lin. Ft.	$ _____	$ _____
6	108.2	Imported Trench Backfill (Class 3) (Includes haul and disposal of unsuitable excavated materail) (Assumed Unit Weight = 133 lbs/ft^3)	3,000.	Ton	$ _____	$ _____
7	108.3	8" x 4" Sewer Service Tap (Full Body Wye) (Includes Wye, clean-out and all fittings required to align and connect the sewer service pipe to the sewer tap)	38.	Each	$ _____	$ _____
8	108.3	8" x 4" Sewer Service Tap (Tapping Saddle) (To be used on the Fusible PVC pipe) (Includes saddle, clean-out and all fittings required to align and connect the sewer service pipe to the sewer tap)	12.	Each	$ _____	$ _____
9	108.3	10" x 4" Sewer Service Tap (Full Body Wye) (Includes Wye, clean-out and all fittings required to align and connect the sewer service pipe to the sewer tap)	6.	Each	$ _____	$ _____
10	108.3	Sewer Service Clean-out Ring and Cover (Castings Inc. CO-8030-CI or Approved Equal) (Includes concrete collar in unpaved areas per City Std. Detail SS-07)	55.	Each	$ _____	$ _____

Bid Schedule: 2018 Sewerline Replacement Project - Phase A
ADDENDUM #1

Item No.	CDOT, City Ref.	Description	Quantity	Units	Unit Price	Total Price
11	108.5	Sanitary Sewer Basic Manhole (48" I.D.)	4.	Each	$ _____	$ _____
12	108.5	Sanitary Sewer Basic Manhole (48" I.D.) (Epoxy Coated Inverts)	21.	Each	$ _____	$ _____
13	108.5	Manhole Barrel Section (D>5') (48" I.D.)	39.	Vert. Ft.	$ _____	$ _____
14	108.5	Connect to Existing Manhole (8" pipe)	2.	Each	$ _____	$ _____
15	108.7	Granular Stabilization Material (Type B) (Crushed Rock) (18" Thick Min.) (Includes haul and disposal of unsuitable excavated material) (Assumed Unit Weight = 138 lbs/ft^3)	550.	Ton	$ _____	$ _____
16	202	Removal of Existing Pipe (Size & type as shown on plans)	5,351.	Lin. Ft.	$ _____	$ _____
17	202	Abandon Pipe (Abandon pipe by plugging ends with concrete)	14.	Each	$ _____	$ _____
18	202	Removal of Asphalt Mat (Full Depth)	1,700.	Sq. Yd.	$ _____	$ _____
19	202	Removal of Asphalt Mat (Planing) (2" Thick for T-Top Section)	1,100.	Sq. Yd.	$ _____	$ _____
20	202	Removal of Concrete with Radiant Heat Tubing (Alley at Munro Pump) (Saw-Cut Concrete for Removal) (6" Thick)	20.	Sq. Yd.	$ _____	$ _____
21	202	Removal of Concrete (Includes, but not limited to, curb, gutter, sidewalk, driveway, slabs, V-pans, curb ramps, intersection corners, aprons, and landscape borders)	220.	Sq. Yd.	$ _____	$ _____
22	202	Removal of Sod	15.	Sq. Yd.	$ _____	$ _____
23	202	Removal of Manhole	24.	Each	$ _____	$ _____
24	202	Abandon Manhole (Remove cone section, ring & cover, and fill remaining barrel sections with flow-fill material)	1.	Each	$ _____	$ _____
25	203	Disposal of Radioactive Material (Dispose at City Shops, 333 West Ave.)	40.	Cu. Yd.	$ _____	$ _____

Bid Schedule: 2018 Sewerline Replacement Project - Phase A
ADDENDUM #1

Item No.	CDOT, City Ref.	Description	Quantity	Units	Unit Price	Total Price
26	206	Structure Backfill (Flow-Fill)	100.	Cu. Yd.	$ _____	$ _____
27	208	Storm Drain Inlet Protection (Silt-Sack) (Includes Maintenance & Removal of Debris, & Removal of Inlet Protection)	15.	Each	$ _____	$ _____
28	208	Concrete Washout Facility	1.	Lump Sum	- - -	$ _____
29	210	Repair Damage to Unlocated Irrigation Lines (Various Sizes and Materials) (1" to 15")	3.	Each	$ _____	$ _____
30	210	Reset Landscape Ground Cover (Landscape Rock) (Match in Kind)	25.	Sq. Yd.	$ _____	$ _____
31	210	Reset Sprinkler System (Complete in Place)	2.	Each	$ _____	$ _____
32	210	Reset Fence (6' High Chain-Link)	32.	Lin. Ft.	$ _____	$ _____
33	212	Re-Sod Area as Shown (Includes 4" Thick of Topsoil placed prior to sod placement)	15.	Sq. Yd.	$ _____	$ _____
34	304	Aggregate Base Course (Class 6) (6" thick)	1,300.	Sq. Yd.	$ _____	$ _____
35	304	Aggregate Base Course (Class 6) (15" thick)	1,700.	Sq. Yd.	$ _____	$ _____
36	401	Hot Bituminous Pavement (Patching) (3 " Thick) (Grading SX, PG 64-22) (GYR.=75) (One 3" Lift)	1,700.	Sq. Yd.	$ _____	$ _____
37	401	Hot Bituminous Pavement (Patching) (2" Thick) (Grading SX, PG 64-22) (GYR.=75) (One 2" Top Mat)	1,550.	Sq. Yd.	$ _____	$ _____
38	401	Hot Bituminous Pavement (Patching) (2" Thick) (Grading SX, PG 64-22) (GYR.=75) (One 2" Top Mat) **(T-Top)**	1,200.	Sq. Yd.	$ _____	$ _____
39	407	Emulsified Asphalt (Tack Coat)	295.	Gallon	$ _____	$ _____

Bid Schedule: 2018 Sewerline Replacement Project - Phase A
ADDENDUM #1

Item No.	CDOT, City Ref.	Description	Quantity	Units	Unit Price	Total Price
40	420	Geotextile (Separator) (Non-Woven) (Wrap stabilization material with fabric) (Minimum Overlap = 24")	1,900.	Sq. Yd.	$ _____	$ _____
41	607	Line Post (Match in Kind) (6' High) (If Necessary)	3.	Each	$ _____	$ _____
42	608	Concrete Sidewalk (4" thick)	14.	Sq. Yd.	$ _____	$ _____
43	608	Concrete Curb and Gutter (Match in Kind)	170.	Lin. Ft.	$ _____	$ _____
44	608	Concrete Driveway Section (8" Thick) (Includes #5 epoxy coated rebar tie-bars @ 12" spacing) (18" long)	61.	Sq. Yd.	$ _____	$ _____
45	608	Concrete Pavement (Radiant Heating) (6" Thick) (Includes exposing existing flexible PVC hydronic heat tubing ends, connecting new tubing to existing tubing, installing new 2" thick insulation board, and #4 rebar @ 2' O.C. spacing each way) (Located at Munro Pump on 9th St.)	20.	Sq. Yd.	$ _____	$ _____
46	608	Concrete Curb, Gutter and Sidewalk (Match in Kind)	130.	Sq. Yd.	$ _____	$ _____
47	608	Concrete Drainage Pan (8" Thick) (See City Standard Detail C-12) (Includes #5 Rebar for Tie-Bars)	8.	Sq. Yd.	$ _____	$ _____
48	608	Cap Top Half of Sewer Pipe in Concrete per City Std. Detail GU-04 (20' long) (If necessary)	3.	Each	$ _____	$ _____
49	608	Encase Sewer Pipe in Concrete per City Std. Detail GU-04 (20' long) (If necessary)	2.	Each	$ _____	$ _____
50	620	Portable Sanitary Facility	1.	Each	$ _____	$ _____
51	625	Construction Surveying (Includes As-Built Drawings)	1.	Lump Sum	- - -	$ _____
52	626	Mobilization	1.	Lump Sum	- - -	$ _____
53	629	Survey Monumentation (Complete in Place) (Reference and Reset)	2.	Each	$ _____	$ _____
54	630	Traffic Control (Complete in Place)	1.	Lump Sum	- - -	$ _____

Bid Schedule: 2018 Sewerline Replacement Project - Phase A
ADDENDUM #1

Item No.	CDOT, City Ref.	Description	Quantity	Units	Unit Price	Total Price
55	630	Traffic Control Plan	1.	Lump Sum	- - -	$ _____
56	630	Flagging	1,500.	Hour	$ _____	$ _____
57	SC 3.3.18	Quality Control Testing	1.	Lump Sum	- - -	$ _____
58	Pump	Bypass Sewage Pumping (At Contractors Discretion)	1.	Lump Sum	- - -	$ _____
MCR		Minor Contract Revisions	- - -	- - -	- - -	$ 125,000.00
				Bid Amount:		**$** _____

Bid Amount:

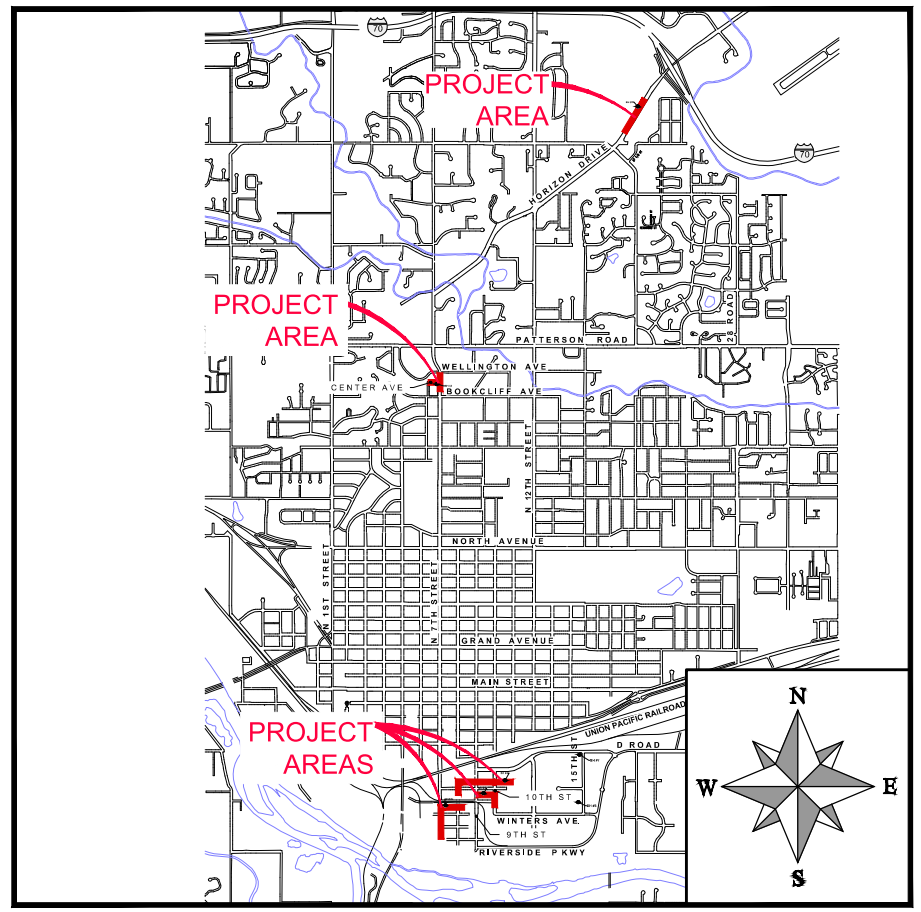
_____ **dollars**

Contractor Name:
Contractor Address:
Contractor Phone #:

PROJECT NO. 902-F001633

2018 SEWER LINE REPLACEMENTS
PHASE A
MARCH, 2018

VICINITY MAP



0 2500 5000 10,000

(IN FEET)
1 inch = 5000 feet

811
Know what's **below.**
Call before you dig.

UTILITIES AND AGENCIES

AGENCY	NAME	POSITION	ROLE	MAILING ADDRESS	STREET ADDRESS	CITY, STATE	VOICE-WK	FAX
CITY OF GRAND JUNCTION	BILL ETCHEVERRY	COLLECTIONS SUPERVISOR	SANITARY SEWER	2145 RIVER ROAD	2145 RIVER ROAD	GRAND JCT., CO 81501	(970) 256-4167	(970) 256-4022
CITY OF GRAND JUNCTION	LEE COOPER	PROJECT ENGINEER	SANITARY SEWER	333 WEST AVE BLDG C	333 WEST AVE BLDG C	GRAND JCT., CO 81501	(970) 256-4155	(970) 256-4022
UNION PACIFIC RAILROAD	JUSTIN O. CORDOVA		UPRR REVIEW				(970) 628-6019	
GRAND VALLEY IRRIGATION CO.	PHIL BERTRAND	MANAGER	IRRIGATION	688 26 RD	688 26 RD	GRAND JCT., CO 81506	(970) 242-2762	
SPECTRUM	JEFF VALDEZ	MANAGER	CABLE TV	2502 FORESIGHT CIRCLE	2502 FORESIGHT CIRCLE	GRAND JCT., CO 81504	(970) 245-8750	(970) 245-6803
CENTURYLINK	CHRIS JOHNSON	ENGINEER	TELEPHONE	2524 BLICHMANN AVE	2524 BLICHMANN AVE	GRAND JCT., CO 81504	(970) 244-4311	(970) 240-4349
UTE WATER	JUSTIN BATES	SUPERVISOR	WATER	PO BOX 460	2190 H ¼ RD	GRAND JCT., CO 81502	(970) 242-7491	(970) 242-9189
XCEL	STEVE PIBURN	UNIT MANAGER	ELECTRIC	2538 BLICHMANN AVE	2538 BLICHMANN AVE	GRAND JCT., CO 81506	(970) 244-2664	(970) 244-2664
XCEL	SARAH BARRICAU	UNIT MANAGER	GAS	2538 BLICHMANN AVE	2538 BLICHMANN AVE	GRAND JCT., CO 81506	(970) 244-2656	(970) 244-2656

NOTE: NOTIFY AFFECTED UTILITY VENDOR 48 HOURS PRIOR TO EXCAVATIONS THAT WILL EXPOSE UTILITY LINES. THE COVER SHEET WILL HAVE A LISTING OF UTILITY VENDORS AND TELEPHONE NUMBERS.

	DESCRIPTION	DATE
REVISION 1	ADDENDUM #1 - REVISED PLANS	04/09/18
REVISION 2		
REVISION 3		
REVISION 4		

CITY OF Grand Junction COLORADO

Public Works
Engineering Division

DOWL
WWW.DOWL.COM
222 South Park Avenue
Montrose, Colorado 81401
970-249-6828

DRAWING STATUS:
- PROGRESS
- FINAL CONSTRUCTION DRAWINGS
- ASBUILT

DESIGNED BY:
BRENDAN HINES, PROJECT ENGINEER 2018

REVIEWED BY:
DAN QUIGLEY, ENGINEERING MANAGER 2018

AUTHORIZED FOR CONSTRUCTION
RANDI KIM, UTILITIES DIRECTOR 2018

ACCEPTED FOR CONSTRUCTION
LEE COOPER, PROJECT ENGINEER 2018

2018 SEWER LINE REPLACEMENTS PHASE A, MARCH, 2018

ABBREVIATIONS

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS
ABC	AGGREGATE BASE COURSE
AC	ASBESTOS CEMENT
AP	ANGLE POINT
ASB	ANCHORED STRAW BALES
ASP	ALUMINIZED STEEL PIPE
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS
AWWA	AMERICAN WATER WORKS ASSOCIATION
BC	BACK OF CURB
BF	BUTTERFLY VALVE
BOW	BACK OF WALK
BCR	BEGIN CURB RETURN
BOT	BOTTOM
BSWMP	BETTER STORM WATER MANAGEMENT PRACTICES
CH	CHORD
CAP	CORRUGATED ALUMINUM PIPE
CDOT	COLORADO DEPARTMENT OF TRANSPORTATION
CI	CAST IRON
C,G,& SW	CURB, GUTTER & SIDEWALK
℄	CENTER LINE
CL	CLEAR
CMP	CORRUGATED METAL PIPE
CO	CLEAN OUT
COMB	COMBINATION (AS IN STORM SEWER AND SANITARY SEWER)
CONC	CONCRETE
CSM	CITY SURVEY MONUMENT
CSP	CORRUGATED STEEL PIPE
CU	COPPER
DI	DUCTILE IRON
DWY	DRIVEWAY
E	ELECTRIC
ECR	END CURB RETURN
EG	EDGE OF GUTTER
EL	ELEVATION
EP	EDGE OF PAVEMENT
EX	EXISTING
FB	FULL BODY
FC	FACE OF CURB
FG	FINISHED GRADE
℉	FLOW LINE
FL	FLANGE
FM	FORCE MAIN
FO	FIBER OPTICS
FS	FAR SIDE
FTG	FOOTING
G	GAS
GB	GRADE BREAK
GM	GAS METER
GV	GATE VALVE
HBP	HOT BITUMINOUS PAVEMENT
HDPE	HIGH DENSITY POLYETHYLENE
INV	INVERT
IRR	IRRIGATION
L	LENGTH OF ARC
LC	LONG CHORD
LF	LINEAR FEET
LL	LONG ARC
LS	SHORT ARC
LT	LEFT
MB	MAILBOX
MCSM	MESA COUNTY SURVEY MONUMENT
MH	MANHOLE
MJ	MECHANICAL JOINT
MW	MILL WRAP
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NOP	NO ONE PERSON
NRCP	NON-REINFORMATIONRCED CONCRETE PIPE
NS	NEAR SIDE
NTS	NOT TO SCALE
OHP	OVERHEAD POWER
OHT	OVERHEAD TELEPHONE
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PE	POLYETHYLENE
PERF	PERFORATED
PI	POINT OF INTERSECTION
PIP	PLASTIC IRRIGATION PIPE
POC	POINT ON CURVE
POT	POINT ON TANGENT
PR	PROPOSED
PRC	POINT OF REVERSE CURVATURE
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
R	RADIUS
RCP	REINFORMATIONRCED CONCRETE PIPE
REQ'D	REQUIRED
RG	RESTRAINED GLANDS
RL	LONG RADIUS
ROW	RIGHT OF WAY
RP	RADIUS POINT
RR	RAIL ROAD
RS	SHORT RADIUS
RT	RIGHT
S	SLOPE
SAN	SANITARY
SC	SHORT CHORD
SCD	STANDARD CONTRACT DOCUMENTS
SCH	SCHEDULE
SF	SILT FENCE
SL	SECTION LINE
SSRB	STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION
SSUU	STANDARD SPECIFICATIONS FOR CONSTRUCTION OF UNDERGROUND UTILITIES
STA	STATION
STL	STEEL
STM	STORM
T	TELEPHONE
TAN	LENGTH OF TANGENT
TC	TOP OF CURB
TH	TEST HOLE
TV	TELEVISION
(TYP)	TYPICAL
UU	UNDERGROUND UTILITIES
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VPC	VERTICAL POINT OF CURVATURE
VPCC	VERTICAL POINT OF COMPOUND CURVATURE
VPRC	VERTICAL POINT OF REVERSE CURVATURE
VPI	VERTICAL POINT OF INTERSECTION
VPT	VERTICAL POINT OF TANGENCY
W	WATER
△	DELTA ANGLE

LEGEND

BSWMP DRAINAGE BASIN BOUNDARY

BSWMP ANCHORED STRAW BALES — ASB ASB ASB ASB ASB ASB ASB ASB

BSWMP SILT FENCE — SF SF SF SF SF SF SF SF

BUILDING

CONCRETE CURB AND GUTTER — 2' CURB AND GUTTER

CONCRETE CURB,GUTTER, & SIDEWALK — 7' C, G, & SW

CONCRETE DITCH — CONCRETE

CONCRETE SIDEWALK — 4" SW

CULVERT — 18" RCP

EARTH DITCH — EARTH . . . EARTH . . . EARTH . . .

EDGE OF GRAVEL

EDGE OF PAVEMENT

FENCE (BARBED WIRE)

FENCE (CHAIN LINK)

FENCE (IRON)

FENCE (PLASTIC)

FENCE (TEMPORARY CONSTRUCTION)

FENCE (WOOD)

FENCE (WOVEN WIRE)

GUARD RAIL

HATCHING: INDICATES ASPHALT REMOVAL

HATCHING: INDICATES CONCRETE REMOVAL

HATCHING: INDICATES STAGING AREA — ~STAGING AREA~

LINE (CENTER OF IMPROVEMENTS) — CENTERLINE

LINE (CITY LIMITS) — CITY LIMITS

LINE (CONTROL) — CONTROL LINE

LINE (EASEMENT)

LINE (MONUMENT/SECTION) — MONUMENT/SECTION LINE

LINE (PROPERTY)

LINE (RIGHT OF WAY)

MATCH LINE — MATCH LINE SEE SHEET NO ?

PIPE (IRRIGATION) — 4" IRR

PIPE (SIPHON) — 4" SIPHON

PROPOSED CONCRETE CURB AND GUTTER

PROPOSED CONCRETE CURB,GUTTER,& SIDEWALK

PROPOSED CONCRETE SIDEWALK

PROPOSED "WET" UTILITIES (CONSTRUCTION NOTE WILL INDICATE TYPE, SIZE, AND MATERIAL OF NEW MAIN) — 8" PVC SANITARY SEWER

PROPOSED SEWER PIPE BURSTING LIMITS

ALL PROPOSED FEATURES NOT SHOWN IN LEGEND WILL BE SHOWN THE SAME AS THEIR EXISTING COUNTERPART, BUT INDICATED BY BOLDER LINETYPE

RAIL ROAD

RETAINING WALL — 1' RETAINING WALL

STRIPING (CONTINUOUS WHITE) — WHITE

STRIPING (DASHED WHITE) — WHITE

STRIPING (CONTINUOUS YELLOW) — YELLOW

STRIPING (DASHED YELLOW) — YELLOW

TOP OF SLOPE — 4570

CONTOUR LINES (SHOWN BETWEEN TOP & TOE) — 4580

TOE OF SLOPE — 4570

TRAFFIC DETECTOR LOOP

UTILITY LINE (ABANDON) (THIS CASE A WATER LINE) — W (ABANDON) 8" W

UTILITY LINE (CABLE TV) — TV TV

UTILITY LINE (ELECTRIC) — E E

UTILITY LINE (FIBER OPTIC) — FO QWEST FO

UTILITY LINE (GAS) — G 1 1/4" MW G

UTILITY LINE (HIGH VOLTAGE OVERHEAD POWER) — HVOHP

UTILITY LINE (OVERHEAD POWER) — OHP

UTILITY LINE (OVERHEAD TELEPHONE) — OHT

UTILITY LINE (SANITARY SEWER) — 8" SAN

UTILITY LINE (SANITARY SEWER FORCE MAIN) — 8" FM

UTILITY LINE (SANITARY SEWER SERVICE) — SS SS

UTILITY LINE (STORM SEWER) — 8" STM

UTILITY LINE (STORM SEWER, PERFORATED) — 6" PERF

UTILITY LINE (STORM/SANITARY SEWER SEWER COMBINATION) — 18" COMB

UTILITY LINE (TELEPHONE) — T T

UTILITY LINE (WATER) — W 8" W

SYMBOLS

BENCH MARK — A

CATCH BASIN

CLEAN OUT — SSCO

CURB STOP

FIRE HYDRANT

GUY WIRE ANCHOR

HEADGATE

IRRIGATION PUMP — P

MAILBOX — MB

MANHOLE (ELECTRIC) — E

MANHOLE (GAS) — G

MANHOLE (SANITARY/STORM)

MANHOLE (TELEPHONE) — T

MANHOLE (TV) — TV

MANHOLE (WATER) — W

METER (GAS) — GM

METER (WATER)

PEDESTAL (TELEPHONE)

PEDESTAL (TV) — TV

PROPERTY PIN

PULL BOX

REDUCER FITTING

SIGN OR POST (SIGN TYPE NOTED) — STOP

SPRINKLER HEAD

STREET LIGHT

SURVEY MONUMENT (CITY) — CSM

SURVEY MONUMENT (TYPE NOTED) — MCSM

TEST HOLE — TH #1

TRAFFIC PAINT MARKING

TRAFFIC SIGNAL POLE AND MAST ARM

UTILITY POLE

VALVE (GAS) — GV

VALVE (IRRIGATION) — IRR

VALVE (WATER)

VEGETATION (HEDGE OR BUSH)

VEGETATION (TREE STUMP)

VEGETATION (TREE) (CALIPER SIZE NOTED) — 8"

WATER HYDRANT — WH

WEIR

YARD LIGHT

BAR SCALE:

0 5 10 20

(IN FEET)
1 inch = 20 feet

NORTH ARROW:

N W E S

DESCRIPTION	DATE
REVISION △	–
REVISION △	–
REVISION △	–
REVISION △	–

DRAWN BY BCH DATE 03/20/18
DESIGNED BY BCH DATE 03/20/18
CHECKED BY ALC DATE
APPROVED BY ALC DATE

SCALES: PLAN & PROFILE
HORIZONTAL: 1" = NA
NA NA NA NA
VERTICAL: 1" = NA
NA NA NA NA

CITY OF Grand Junction COLORADO

PUBLIC WORKS
ENGINEERING DIVISION

2018 SEWER LINE REPLACEMENTS – PHASE A
STANDARD ABBREVIATIONS, LEGEND, AND SYMBOLS

Bid Schedule: 2018 Sewerline Replacement Project - Phase A

ADDENDUM #1

Item No.	CDOT, City Ref.	Description	QTY.	Units
1	108.2	4" Sewer Pipe Service (SDR-35 PVC) (Includes cost of connection to the existing sewer service line)	910.	Lin. Ft.
2	108.2	6" Gravity Sewer Pipe (SDR-35 PVC) (Includes cost of connection to the existing sewer pipe)	60.	Lin. Ft.
3	108.2	8" Gravity Sewer Pipe (SDR-35 PVC) (Includes cost of connection to the existing sewer pipe)	3,560.	Lin. Ft.
4	108.2	8" Gravity Sewer Pipe (Fusible PVC) (Pipe-Bursting Installation Method)	1,170.	Lin. Ft.
5	108.2	10" Gravity Sewer Pipe (SDR-35 PVC) (Includes cost of connection to the existing sewer pipe)	815.	Lin. Ft.
6	108.2	Imported Trench Backfill (Class 3) (Includes haul and disposal of unsuitable excavated materail) (Assumed Unit Weight = 133 lbs/ft3)	3,000.	Ton
7	108.3	8" x 4" Sewer Service Tap (Full Body Wye) (Includes Wye, clean-out and all fittings required to align and connect the sewer service pipe to the sewer tap)	38.	Each
8	108.3	8" x 4" Sewer Service Tap (Tapping Saddle) (To be used on the Fusible PVC pipe) (Includes saddle, clean-out and all fittings required to align and connect the sewer service pipe to the sewer Tap)	12.	Each
9	108.3	10" x 4" Sewer Service Tap (Full Body Wye) (Includes Wye, clean-out and all fittings required to align and connect the sewer service pipe to the sewer tap)	6.	Each
10	108.3	Sewer Service Clean-out Ring and Cover (Castings Inc. CO-8030-CI or Approved Equal) (Includes concrete collar in unpaved areas per City Std. Detail SS-07)	55.	Each
11	108.5	Sanitary Sewer Basic Manhole (48" I.D.)	4.	Each
12	108.5	Sanitary Sewer Basic Manhole (48" I.D.) (Epoxy Coated Inverts)	21.	Each
13	108.5	Manhole Barrel Section (D>5') (48" I.D.)	39.	Vert. Ft.
14	108.5	Connect to Existing Manhole (8" pipe)	2.	Each
15	108.7	Granular Stabilization Material (Type B) (Crushed Rock) (18" Thick Min.) (Includes haul and disposal of unsuitable excavated material) (Assumed Unit Weight = 138 lbs/ft3)	550.	Ton
16	202	Removal of Existing Pipe (Size & type as shown on plans)	5,351.	Lin. Ft.
17	202	Abandon Pipe (Abandon pipe by plugging ends with concrete)	14.	Each
18	202	Removal of Asphalt Mat (Full Depth)	1,700.	Sq. Yd.
19	202	Removal of Asphalt Mat (Planing) (2" Thick for T-Top Section)	1,100.	Sq. Yd.
20	202	Removal of Concrete with Hydronic Heat Tubing (Alley at Munro Pump)	20.	Sq. Yd.
21	202	Removal of Concrete (Includes, but not limited to, curb, gutter, sidewalk, driveway, slabs, V-pans, curb ramps, intersection corners, aprons, and landscape borders)	220.	Sq. Yd.
22	202	Removal of Sod	15.	Sq. Yd.
23	202	Removal of Manhole	24.	Each
24	202	Abandon Manhole (Remove cone section, ring & cover, and fill remaining barrel sections with flow-fill material)	1.	Each
25	203	Disposal of Radioactive Material (Dispose at City Shops, 333 West Ave.)	40.	Cu. Yd.
26	206	Structure Backfill (Flow-Fill)	100.	Cu. Yd.
27	208	Storm Drain Inlet Protection (Silt-Sack) (Includes Maintenance & Removal of Debris, & Removal of Inlet Protection)	15.	Each
28	208	Concrete Washout Facility	1.	Lump Sum
29	210	Repair Damage to Unlocated Irrigation Lines (Various Sizes and Materials) (1" to 15")	3.	Each
30	210	Reset Landscape Ground Cover (Landscape Rock) (Match in Kind)	25.	Sq. Yd.
31	210	Reset Sprinkler System (Complete in Place)	2.	Each
32	210	Reset Fence (6' High Chain-Link)	32.	Lin. Ft.
33	212	Re-Sod Area as Shown (Includes 4" Thick of Topsoil placed prior to sod placement)	15.	Sq. Yd.
34	304	Aggregate Base Course (Class 6) (6" thick)	1,300.	Sq. Yd.
35	304	Aggregate Base Course (Class 6) (15" thick)	1,700.	Sq. Yd.
36	401	Hot Bituminous Pavement (Patching) (3 " Thick) (Grading SX, PG 64-22) (GYR.=75) (One 3" Lift)	1,700.	Sq. Yd.
37	401	Hot Bituminous Pavement (Patching) (2" Thick) (Grading SX, PG 64-22) (GYR.=75) (One 2" Top Mat)	1,550.	Sq. Yd.
38	401	Hot Bituminous Pavement (Patching) (2" Thick) (Grading SX, PG 64-22) (GYR.=75) (One 2" Top Mat) (T-Top)	1,200.	Sq. Yd.
39	407	Emulsified Asphalt (Tack Coat)	295.	Gallon
40	420	Geotextile (Separator) (Non-Woven) (Wrap stabilization material with fabric) (Minimum Overlap = 24")	1,900.	Sq. Yd.
41	607	Line Post (Match in Kind) (6' High) (If Necessary)	3.	Each
42	608	Concrete Sidewalk (4" thick)	14.	Sq. Yd.
43	608	Concrete Curb and Gutter (Match in Kind)	170.	Lin. Ft.
44	608	Concrete Driveway Section (8" Thick) (Includes #5 epoxy coated rebar tie-bars @ 12" spacing) (18" long)	61.	Sq. Yd.
45	608	Concrete Pavement (Hydronic Heating) (8" Thick) (Includes exposing existing PEX hydronic heat tubing and installing new PEX tubing and connecting new tubing to the existing tubing) (Located at Munro Pump on 9th St.)	20.	Sq. Yd.
46	608	Concrete Curb, Gutter and Sidewalk (Match in Kind)	130.	Sq. Yd.
47	608	Concrete Drainage Pan (8" Thick) (See City Standard Detail C-12) (Includes #5 Rebar for Tie-Bars)	8.	Sq. Yd.
48	608	Cap Top Half of Sewer Pipe in Concrete per City Std. Detail GU-04 (20' long) (If necessary)	3.	Each
49	608	Encase Sewer Pipe in Concrete per City Std. Detail GU-04 (20' long) (If necessary)	2.	Each
50	620	Portable Sanitary Facility	1.	Each
51	625	Construction Surveying (Includes As-Built Drawings)	1.	Lump Sum
52	626	Mobilization	1.	Lump Sum
53	629	Survey Monumentation (Complete in Place) (Reference and Reset)	2.	Each
54	630	Traffic Control (Complete in Place)	1.	Lump Sum
55	630	Traffic Control Plan	1.	Lump Sum
56	630	Flagging	1,500.	Hour
57	SC 3.3.18	Quality Control Testing	1.	Lump Sum
58	Pump	Bypass Sewage Pumping (At Contractors Discretion)	1.	Lump Sum
MCR		Minor Contract Revisions	---	---

DESCRIPTION	DATE
REVISION 1 ADDENDUM #1 - REVISED PLANS	04/09/18
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY BCH DATE 03/20/18
DESIGNED BY BCH DATE 03/20/18
CHECKED BY ALC DATE
APPROVED BY ALC DATE

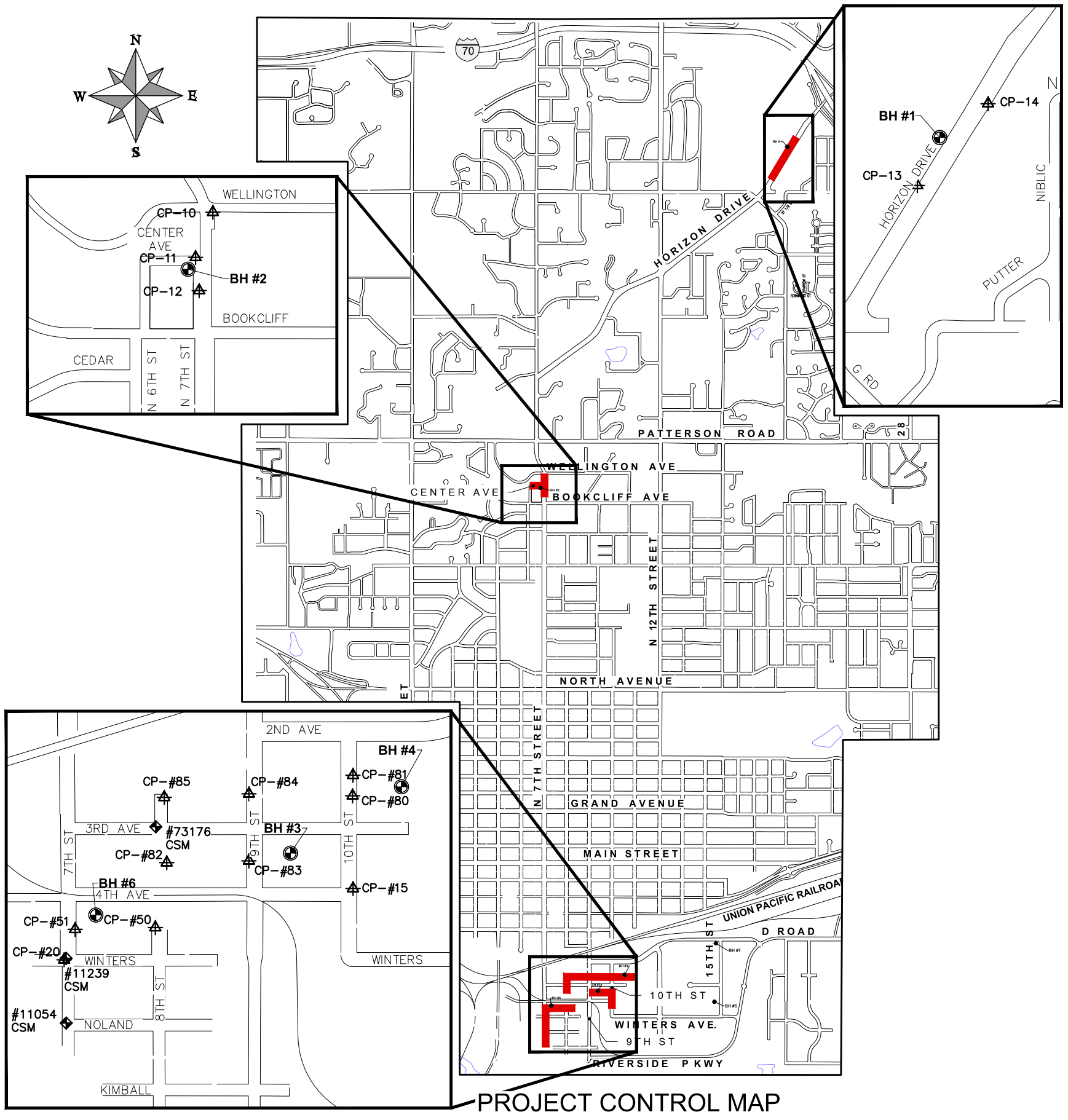
SCALES: PLAN & PROFILE
HORIZONTAL: 1" = NA
0 NA NA NA
VERTICAL: 1" = NA
0 AN NA NA

CITY OF Grand Junction COLORADO

PUBLIC WORKS
ENGINEERING DIVISION

2018 SEWER LINE REPLACEMENTS - PHASE A
SUMMARY OF APPROXIMATE QUANTITIES

PROJECT NO. 902-F001633



PROJECT CONTROL MAP

PROJECT CONTROL TABLE

POINT #	EASTING	NORTHING	ELEVATION	DESCRIPTION
10	92296.8610	44026.653	4644.22	CP /PK-W 2352/
11	92208.8840	43797.128	4639.97	CP /PK-W CENTER/
12	92227.3340	43628.175	4638.82	CP /PK-W 2335/
13	97288.0100	50718.990	4713.06	CP /PK CORPLEX/
14	97647.3600	51135.320	4718.27	CP /PK LOCO/
15	93704.9190	32906.056	4576.49	CP /PK/
20	92236.7670	32543.653	4568.63	CP PK /WINT/
40	96013.6840	32870.506	4581.20	CP /PK AT16THCOR/
41	96012.0220	33194.554	4582.47	CP /PK 4TH/
42	96008.9050	33693.391	4584.31	CP /PK PARKY/
43	95950.2510	34131.306	4587.50	CP /PK D RD/
50	92700.2290	32707.940	4570.10	CP /60D/
51	92292.7850	32698.942	4569.69	CP /6PK/
80	93702.5340	33377.715	4578.10	CP /PK/
81	93704.6520	33482.374	4578.26	CP /PK/
82	92758.1400	33037.764	4573.30	CP
83	93175.8630	33046.465	4575.08	CP
84	93176.0500	33387.564	4576.16	CP /PK/
85	92745.6220	33369.555	4574.75	CP /PK/
11054	92247.7190	32222.056	4567.14	CSM
11239	92246.9930	32551.257	4568.50	CSM

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY BCH DATE 03/20/18
DESIGNED BY BCH DATE 03/20/18
CHECKED BY ALC DATE
APPROVED BY ALC DATE

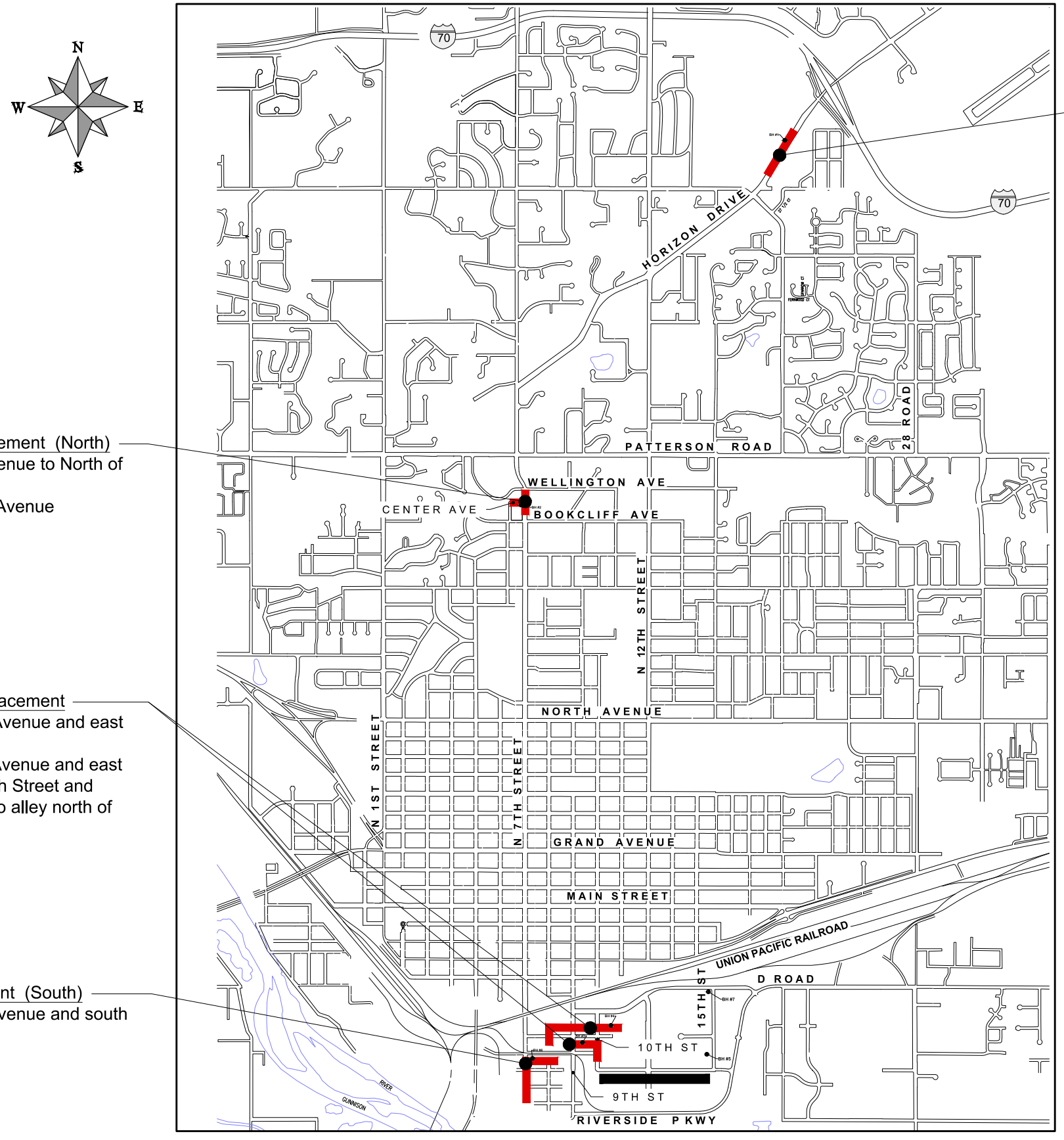
INDIVIDUAL CONTROL MAPS
HORIZONTAL: 1" = 600'
0 300 600 1200
VERTICAL: 1" = NA
0 NA NA NA

CITY OF Grand Junction COLORADO

PUBLIC WORKS
ENGINEERING DIVISION

2018 SEWER LINE REPLACEMENTS - PHASE A
PROJECT CONTROL MAP

PROJECT NO. 902-F001633



Horizon Drive Sewer Replacement
- From 723 Horizon Drive to 708 Horizon Drive

(Sheet 18 to Sheet 19)

7th Street Sewer Replacement (North)
- From Wellington Avenue to North of Bookcliff Avenue
- West along Center Avenue

(Sheet 15 to Sheet 17)

10th Street Sewer Replacement
- Alley north of 3rd Avenue and east of 9th Street
- Alley north of 4th Avenue and east of 9th Street to 10th Street and along 10th Street to alley north of Winters Avenue

(Sheet 6 to Sheet 11)

7th Street Sewer Replacement (South)
- Alley north of Winters Avenue and south along S. 7th Street

(Sheet 12 to Sheet 14)

PROJECT LOCATION MAP

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

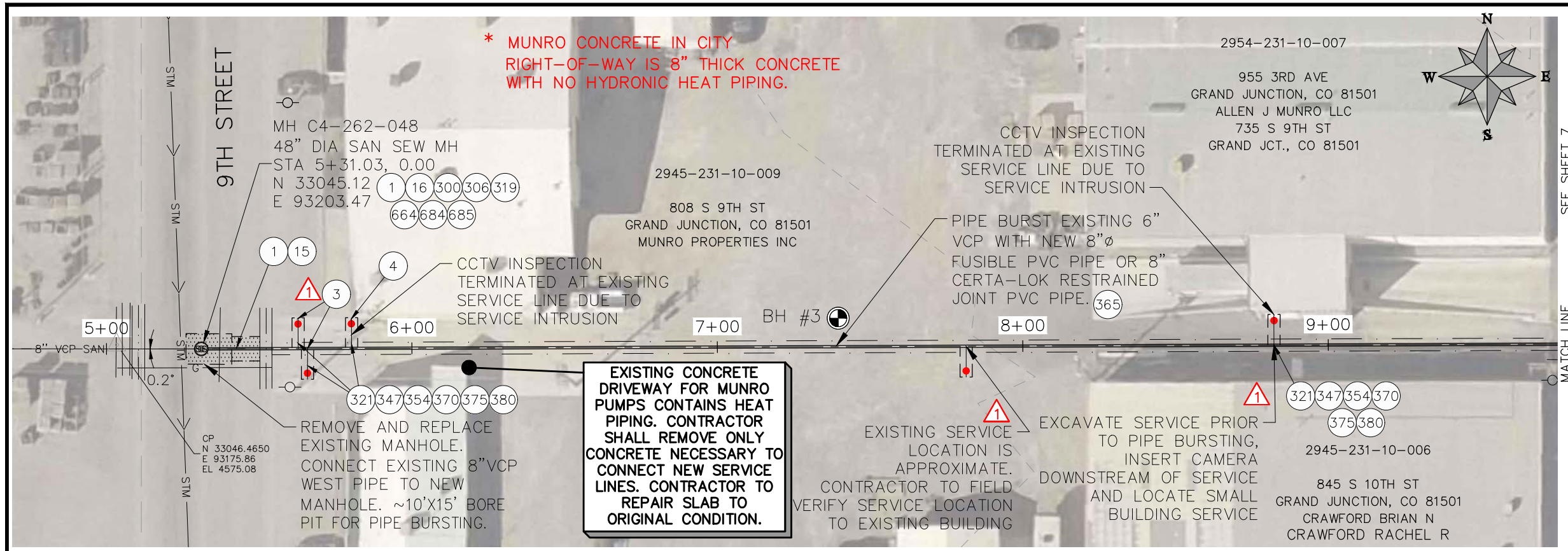
DRAWN BY DDC DATE 2018
DESIGNED BY BCH DATE 2018
CHECKED BY ALC DATE
APPROVED BY ALC DATE

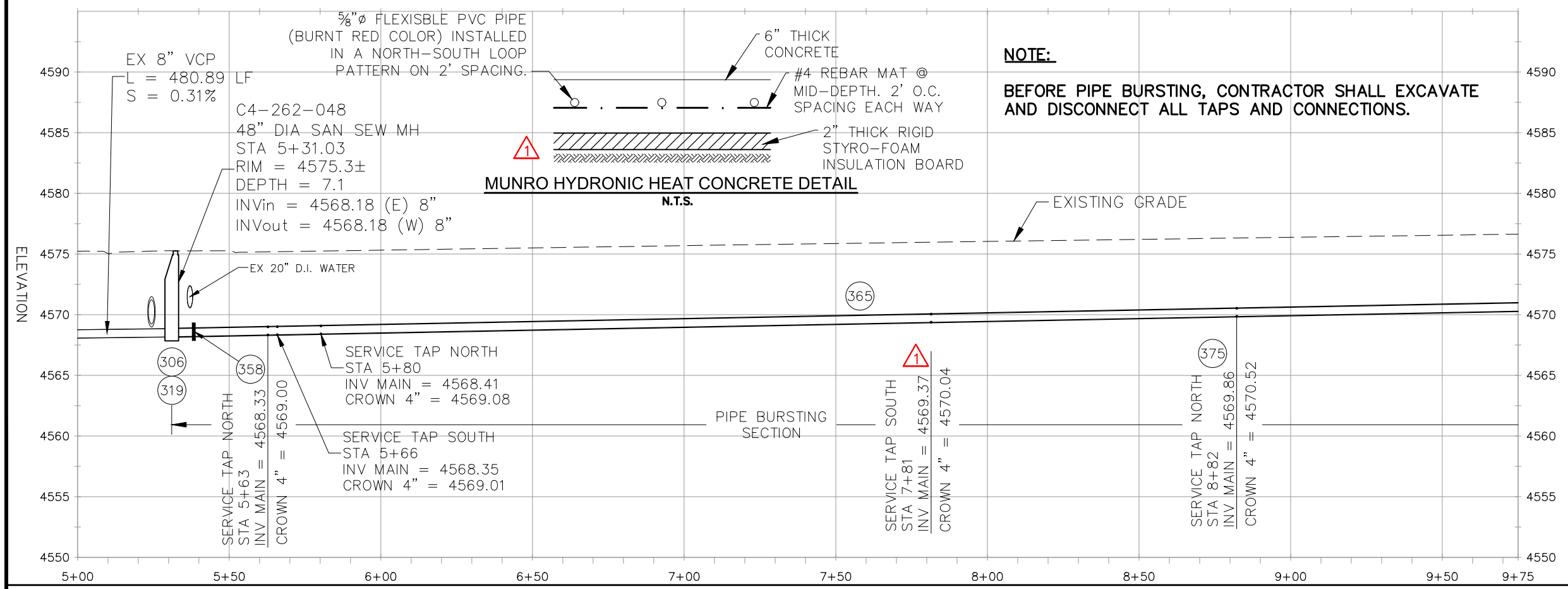
PROJECT CONTROL MAP
HORIZONTAL: 1" = 2500'
0 2500 1250 5000
VERTICAL: 1" = NA
0 NA NA NA

CITY OF Grand Junction COLORADO

PUBLIC WORKS
ENGINEERING DIVISION

2018 SEWER LINE REPLACEMENTS – PHASE A
PROJECT LOCATION MAP

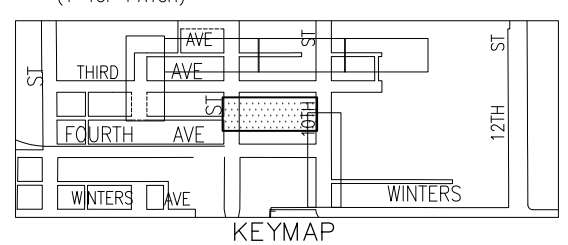




PROJECT NO. 902-F001633

CONSTRUCTION NOTES

1. 202 – REMOVAL OF ASPHALT MAT. CUT AND REMOVE ASPHALT AS SHOWN. (INDICATED BY DOT HATCH PATTERN)
3. 202 – REMOVAL OF CONCRETE. SAW CUT AND REMOVE CONCRETE AS SHOWN. (INDICATED BY CROSS HATCH PATTERN) INCLUDES BUT NOT LIMITED TO CURB, GUTTER, SIDEWALK, DRIVEWAY, SLABS, V-PAN, CURB RAMPS, INTERSECTION CORNERS, APRONS, AND LANDSCAPE BORDERS.
4. 202 – REMOVAL OF CONCRETE WITH HYDRONIC HEAT PIPING (SAW CUT AND REMOVE CONCRETE AS SHOWN)
15. 202 – REMOVAL OF PIPE AS SHOWN. (SIZE AND TYPE AS SHOWN ON PLAN)
16. 202 – REMOVAL OF MANHOLE. CONTRACTOR SHALL SALVAGE RING AND COVER AND DELIVER TO CITY SHOPS
300. 102.11/108.5 – SANITARY SEWER BASIC MANHOLE (48" I.D.). INCLUDES CONNECTION OF ADJACENT SEWER LINE, FORMING INVERTS AND ADJUSTING TO FINAL GRADE. (SEE CITY OF GRAND JUNCTION STANDARD DETAIL SS-02).
306. 102.11/108.5 – MANHOLE BARREL SECTION (D>5') (48" I.D.).
319. EPOXY COAT MANHOLE INVERT. COST IS INCIDENTAL TO COST OF MANHOLE INSTALLATION.
321. 102.9/108.2 – 4" GRAVITY SEWER PIPE (SDR 35 PVC). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.
347. 102/103/104 – CONTRACTOR SHALL FIELD VERIFY EXISTING SEWER SERVICE LOCATIONS (SEWER SERVICE LOCATIONS AND CONNECTION POINTS TO EXISTING SERVICES ARE SHOWN FOR ESTIMATING PURPOSES ONLY AND MAY VARY FROM WHAT IS SHOWN).
358. 103 – CLAY CUT-OFF WALL (INCIDENTAL TO SEWER INSTALLATION PAY ITEM)
354. 104.20 – INSTALL 2-WAY SANITARY SEWER SERVICE CLEANOUT (STD. DETAIL SS-07). INCLUDES CLEANOUT RING AND COVER AND CONCRETE COLLAR IN UNPAVED AREAS (SEE STD. DETAIL SS-07).
365. 102.9B – INSTALL NEW 8" FUSIBLE PVC (FPVC) PIPE OR 8" (CERTA-LOK) RESTRAINED PVC PIPE.
370. 102.9/108.3 – 8" x 4" SEWER SERVICE TAPPING SADDLE.
375. 102.9/104.2/108.2 – 4" SEWER SERVICE TAP TO INCLUDE: DISCONNECTING EXISTING SERVICE AND INSTALLING NEW SERVICE TAP. NEW TAP SHALL BE (W/ APPROVAL OF ENGINEER OR INSPECTOR ON CASE-SPECIFIC BASIS): FULL BODY WYE W/ STREET 45 (PIPE STUBS AND COUPLINGS INCLUDED), INSERTA-TEE, OR SADDLE; ALL BENDS AND FITTINGS, CLEANOUT, VERTICAL PIPING, CLEANOUT RING & COVER AND CONCRETE COLLAR, AS REQUIRED, TO ALIGN AND CONNECT TO EXISTING SERVICE AT ROW LINE. FOR 4" SERVICE PIPE (SEE CITY OF GRAND JUNCTION STD. DETAIL "TYPICAL SERVICE "Y" CONNECTION" SS-06 AND SS-07).
380. CONNECT TO EXISTING SEWER PIPE. THE CONTRACT PRICE FOR SEWER PIPE SHALL INCLUDE THE COST OF CONNECTION TO EXISTING PIPELINE
664. 304 – AGGREGATE BASE COURSE (CLASS 6) (15" THICK)
684. 401.08 – HOT BITUMINOUS PAVEMENT (PATCHING) (3" THICK) (GRADING SX, PG 64-22, GYR.=75) (ONE 3" LIFT BOTTOM MAT)
685. 401.08 – HOT BITUMINOUS PAVEMENT (PATCHING) (2" THICK) (GRADING SX, PG 64-22, GYR.=75) (ONE 2" LIFT TOP MAT) (T-TOP PATCH)



KEYMAP

DESCRIPTION	DATE
REVISION 1 ADDENDUM #1 - REVISED PLANS	04/09/18
REVISION 2	
REVISION 3	
REVISION 4	

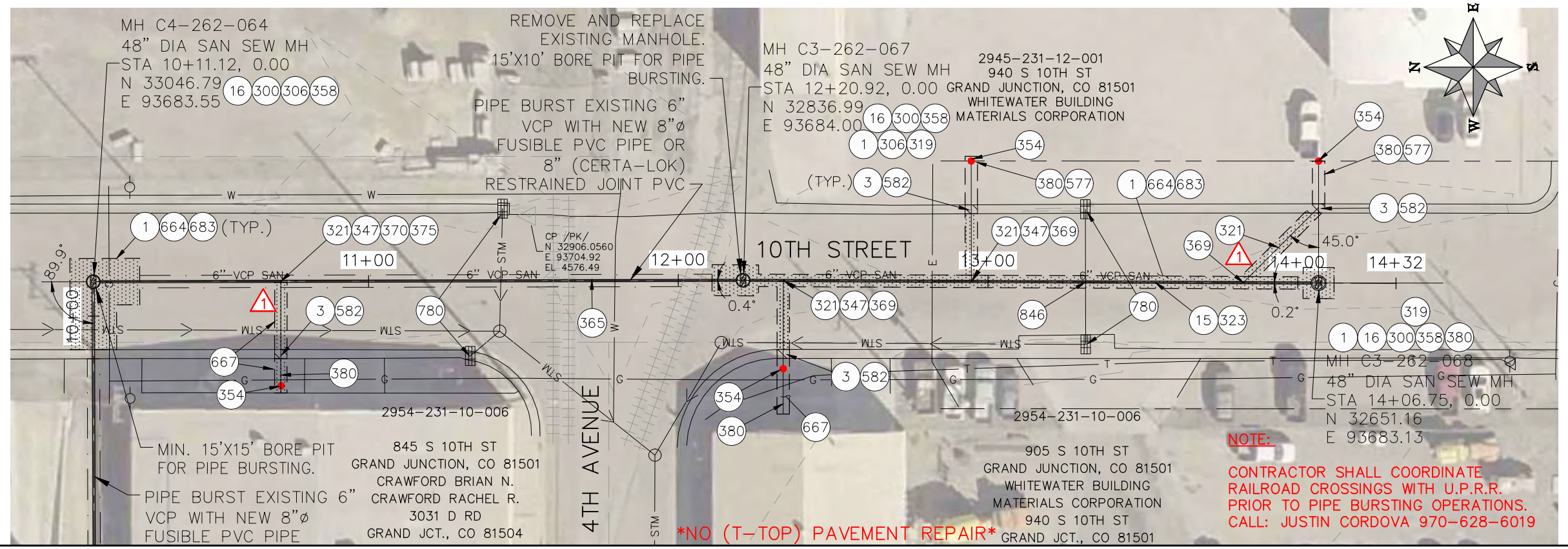
DRAWN BY BCH DATE 03/20/18
DESIGNED BY BCH DATE 03/20/18
CHECKED BY ALC DATE
APPROVED BY ALC DATE

SCALES: PLAN & PROFILE
HORIZONTAL: 1" = 40'
0 10 20 40
VERTICAL: 1" = 10'
0 2.5 5 10

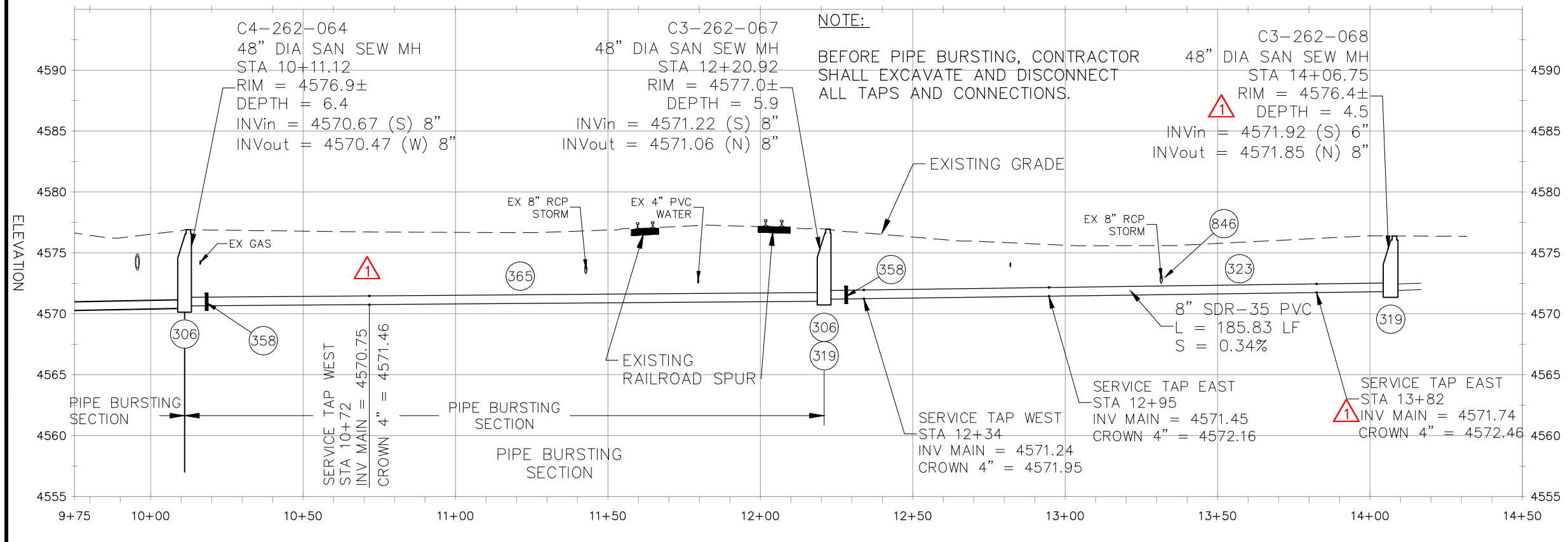
CITY OF Grand Junction COLORADO

PUBLIC WORKS
ENGINEERING DIVISION

2018 SEWER LINE REPLACEMENT – PHASE A
4TH AVENUE ALLEY PLAN AND PROFILE
STA 5+00 TO STA 9+75



MATCH LINE SEE SHEET 6



PROJECT NO. 902-F001633

CONSTRUCTION NOTES

1. 202 – REMOVAL OF ASPHALT MAT. CUT AND REMOVE ASPHALT AS SHOWN. (INDICATED BY DOT HATCH PATTERN)
3. 202 – REMOVAL OF CONCRETE. SAW CUT AND REMOVE CONCRETE AS SHOWN. (INDICATED BY CROSS HATCH PATTERN) INCLUDES BUT NOT LIMITED TO CURB, GUTTER, SIDEWALK, DRIVEWAY, SLABS, V-PAN, CURB RAMPS, INTERSECTION CORNERS, APRONS, AND LANDSCAPE BORDERS.
15. 202 – REMOVAL OF PIPE AS SHOWN. (SIZE AND TYPE AS SHOWN ON PLAN)
16. 202 – REMOVAL OF MANHOLE. CONTRACTOR SHALL SALVAGE RING AND COVER AND DELIVER TO CITY SHOPS
300. 102.11/108.5 – SANITARY SEWER BASIC MANHOLE (48" I.D.). INCLUDES CONNECTION OF ADJACENT SEWER LINE, FORMING INVERTS AND ADJUSTING TO FINAL GRADE. (SEE CITY OF GRAND JUNCTION STANDARD DETAIL SS-02).
306. 102.11/108.5 – MANHOLE BARREL SECTION (D>5') (48" I.D.).
319. EPOXY COAT MANHOLE INVERT. COST IS INCIDENTAL TO COST OF MANHOLE INSTALLATION.
321. 102.9/108.2 – 4" GRAVITY SEWER PIPE (SDR 35 PVC). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.
323. 102.9/108.2 – 8" GRAVITY SEWER PIPE (SDR 35 PVC). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.
347. 102/103/104 – CONTRACTOR SHALL FIELD VERIFY EXISTING SEWER SERVICE LOCATIONS (SEWER SERVICE LOCATIONS AND CONNECTION POINTS TO EXISTING SERVICES ARE SHOWN FOR ESTIMATING PURPOSES ONLY AND MAY VARY FROM WHAT IS SHOWN).
354. 104.20 – INSTALL 2-WAY SANITARY SEWER SERVICE CLEANOUT (STD. DETAIL SS-07). INCLUDES CLEANOUT RING AND COVER AND CONCRETE COLLAR IN UNPAVED AREAS (SEE STD. DETAIL SS-07).
358. 103 – CLAY CUT-OFF WALL (INCIDENTAL TO SEWER INSTALLATION PAY ITEM)
365. 102.9B – INSTALL NEW 8" FUSIBLE PVC (FPVC) PIPE OR 8" (CERTA-LOK) RESTRAINED PVC PIPE.
369. 102.9/108.3 – 8" x 4" SEWER SERVICE TAP. FULL BODY WYE (SEE STD. DETAIL SS-06).
370. 102.9/108.3 – 8" x 4" SEWER SERVICE TAPPING SADDLE.
375. 102.9/104.2/108.2 – 4" SEWER SERVICE TAP TO INCLUDE: DISCONNECTING EXISTING SERVICE AND INSTALLING NEW SERVICE TAP. NEW TAP SHALL BE (W/ APPROVAL OF ENGINEER OR INSPECTOR ON CASE-SPECIFIC BASIS): FULL BODY WYE W/ STREET 45 (PIPE STUBS AND COUPLINGS INCLUDED), INSERTA-TEE, OR SADDLE; ALL BENDS AND FITTINGS, CLEANOUT, VERTICAL PIPING, CLEANOUT RING & COVER AND CONCRETE COLLAR, AS REQUIRED, TO ALIGN AND CONNECT TO EXISTING SERVICE AT ROW LINE. FOR 4" SERVICE PIPE (SEE CITY OF GRAND JUNCTION STD. DETAIL "TYPICAL SERVICE "Y" CONNECTION" SS-06 AND SS-07).
380. CONNECT TO EXISTING SEWER PIPE. THE CONTRACT PRICE FOR SEWER PIPE SHALL INCLUDE THE COST OF CONNECTION TO EXISTING PIPELINE
577. 608.06 – CONCRETE DRIVEWAY SECTION (MATCH IN KIND) (INCLUDES #5 REBAR TIE-BARS @ 12" O.C.) (EPOXY COATED TIE-BARS) (18" LONG)
582. 608.06 – CONCRETE DRAINAGE PAN (MATCH IN KIND)
664. 304 – AGGREGATE BASE COURSE (CLASS 6) (15" THICK)
667. 304 – AGGREGATE BASE COURSE (CLASS 6) (6" THICK)
683. 401.08 – HOT BITUMINOUS PAVEMENT (PATCHING) (5" THICK) (GRADING SX, PG 64-22, GYR.=75) (TWO LIFTS)
780. 208 – STORM DRAIN INLET PROTECTION (SILT-SACK) (INCLUDES MAINTENANCE AND REMOVAL OF DIRT AND DEBRIS)
846. POTHOLE EXISTING UTILITY AHEAD OF CONSTRUCTION. COORDINATE ANY NEEDED DESIGN CHANGES WITH PROJECT ENGINEER SO AS TO AVOID UTILITY CONFLICTS.

DESCRIPTION	DATE
REVISION 1 ADDENDUM #1 – REVISED PLANS	04/09/18
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REVISION 3	
REVISION 4	

DRAWN BY BCH DATE 03/20/18
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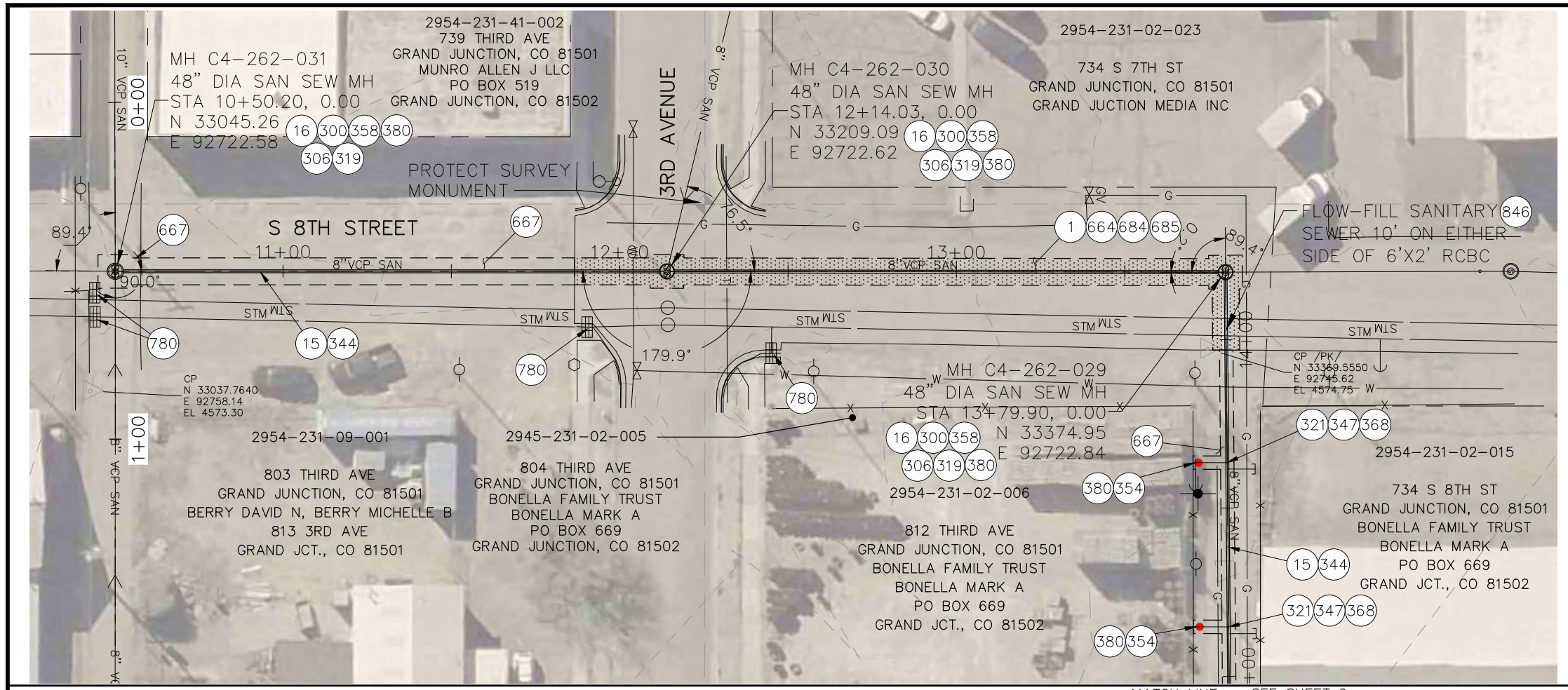
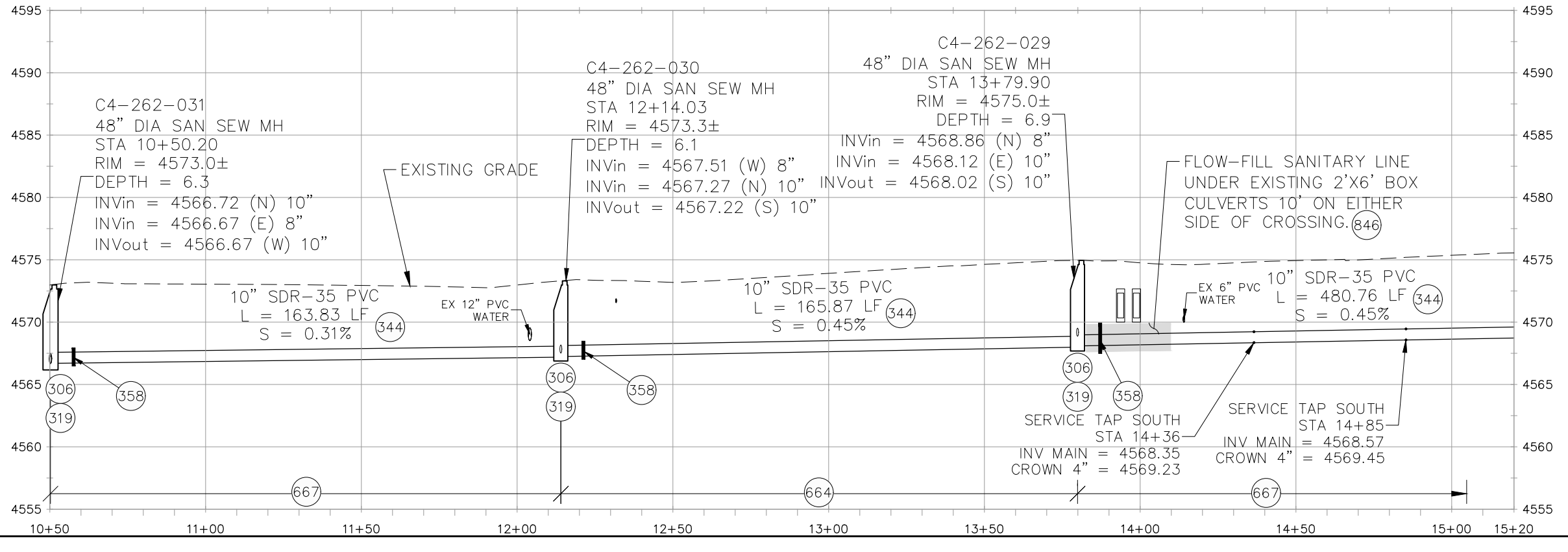
SCALES: PLAN & PROFILE
HORIZONTAL: 1" = 40'
0 10 20 40
VERTICAL: 1" = 10'
0 2.5 5 10

CITY OF Grand Junction COLORADO

PUBLIC WORKS
ENGINEERING DIVISION

2018 SEWER LINE REPLACEMENT – PHASE A
S 10TH STREET PLAN AND PROFILE
STA 9+75 TO STA 14+50





PROJECT NO. 902-F001633

CONSTRUCTION NOTES

(1) 202 – REMOVAL OF ASPHALT MAT. CUT AND REMOVE ASPHALT AS SHOWN. (INDICATED BY DOT HATCH PATTERN)

(15) 202 – REMOVAL OF PIPE AS SHOWN. (SIZE AND TYPE AS SHOWN ON PLAN)

(16) 202 – REMOVAL OF MANHOLE. CONTRACTOR SHALL SALVAGE RING AND COVER AND DELIVER TO CITY SHOPS

(300) 102.11/108.5 – SANITARY SEWER BASIC MANHOLE (48" I.D.). INCLUDES CONNECTION OF ADJACENT SEWER LINE, FORMING INVERTS AND ADJUSTING TO FINAL GRADE. (SEE CITY OF GRAND JUNCTION STANDARD DETAIL SS-02).

(306) 102.11/108.5 – MANHOLE BARREL SECTION (D>5') (48" I.D.).

(319) EPOXY COAT MANHOLE INVERT. COST IS INCIDENTAL TO COST OF MANHOLE INSTALLATION.

(321) 102.9/108.2 – 4" GRAVITY SEWER PIPE (SDR 35 PVC). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.

(344) 102.9/108.2 – 10" GRAVITY SEWER PIPE (SDR 35 PVC). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.

(347) 102/103/104 – CONTRACTOR SHALL FIELD VERIFY EXISTING SEWER SERVICE LOCATIONS (SEWER SERVICE LOCATIONS AND CONNECTION POINTS TO EXISTING SERVICES ARE SHOWN FOR ESTIMATING PURPOSES ONLY AND MAY VARY FROM WHAT IS SHOWN).

(354) 104.20 – INSTALL 2-WAY SANITARY SEWER SERVICE CLEANOUT (STD. DETAIL SS-07). INCLUDES CLEANOUT RING AND COVER AND CONCRETE COLLAR IN UNPAVED AREAS (SEE STD. DETAIL SS-07).

(358) 103 – CLAY CUT-OFF WALL (INCIDENTAL TO SEWER INSTALLATION PAY ITEM)

(368) 102.9/108.3 – 10" x 4" SEWER SERVICE TAP. FULL BODY WYE (SEE STD. DETAIL SS-06).

(380) CONNECT TO EXISTING SEWER PIPE. THE CONTRACT PRICE FOR SEWER PIPE SHALL INCLUDE THE COST OF CONNECTION TO EXISTING PIPELINE

(664) 304 – AGGREGATE BASE COURSE (CLASS 6) (15" THICK)

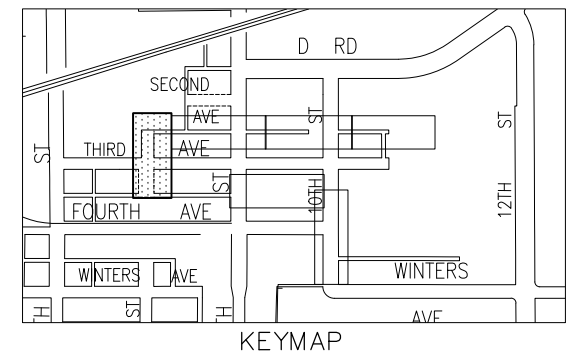
(667) 304 – AGGREGATE BASE COURSE (CLASS 6) (6" THICK)

(684) 401.08 – HOT BITUMINOUS PAVEMENT (PATCHING) (3" THICK) (GRADING SX, PG 64-22, GYR.=75) (ONE 3" LIFT BOTTOM MAT)

(685) 401.08 – HOT BITUMINOUS PAVEMENT (PATCHING) (2" THICK) (GRADING SX, PG 64-22, GYR.=75) (ONE 2" LIFT TOP MAT) (T-TOP PATCH)

(780) 208 – STORM DRAIN INLET PROTECTION (SILT-SACK) (INCLUDES MAINTENANCE AND REMOVAL OF DIRT AND DEBRIS)

(846) POTHOLE EXISTING UTILITY AHEAD OF CONSTRUCTION. COORDINATE ANY NEEDED DESIGN CHANGES WITH PROJECT ENGINEER SO AS TO AVOID UTILITY CONFLICTS.



KEYMAP

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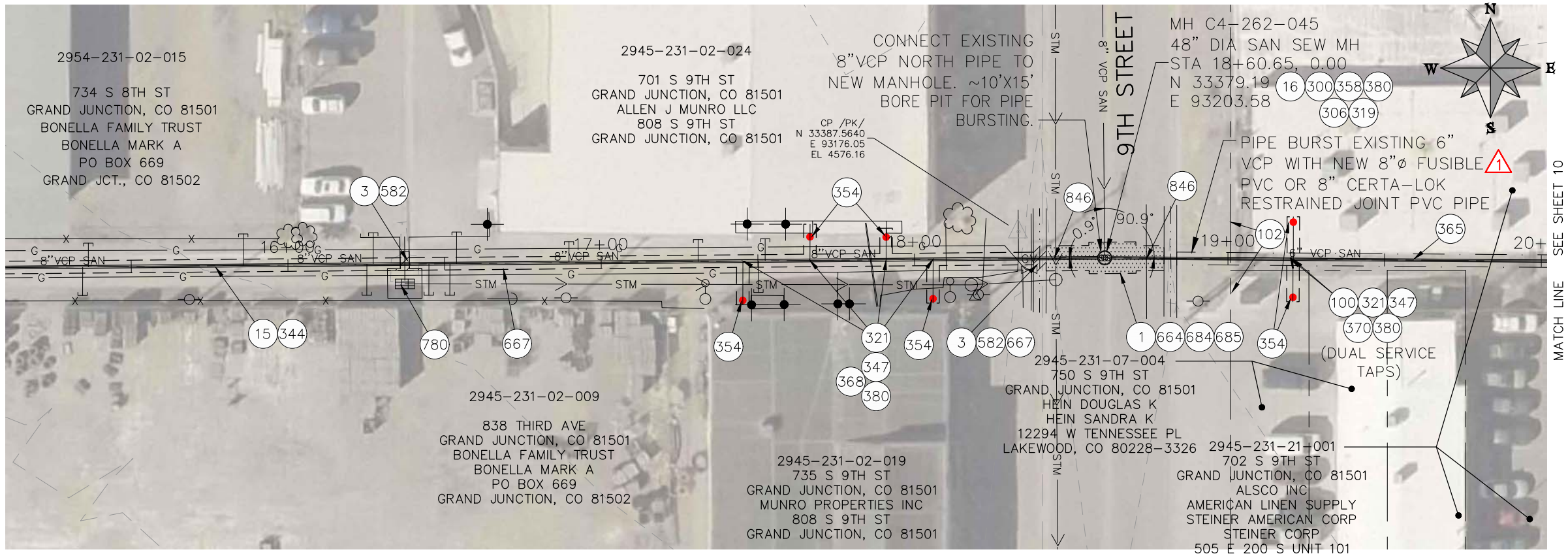
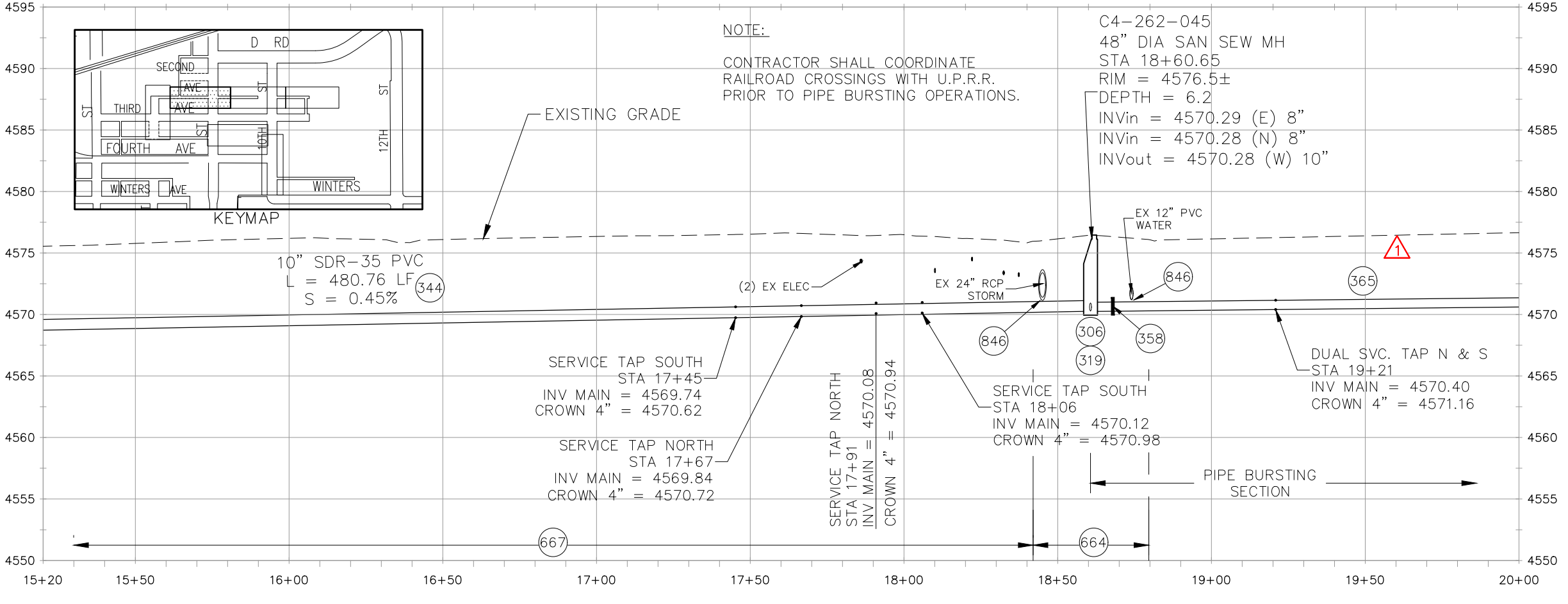
CITY OF Grand Junction COLORADO

PUBLIC WORKS
ENGINEERING DIVISION

2018 SEWER LINE REPLACEMENT – PHASE A
S 8TH STREET PLAN AND PROFILE
STA 10+50 TO STA 15+20





PROJECT NO. 902-F001633

CONSTRUCTION NOTES

(1) 202 – REMOVAL OF ASPHALT MAT. CUT AND REMOVE ASPHALT AS SHOWN. (INDICATED BY DOT HATCH PATTERN)

(3) 202 – REMOVAL OF CONCRETE. SAW CUT AND REMOVE CONCRETE AS SHOWN. (INDICATED BY CROSS HATCH PATTERN) INCLUDES BUT NOT LIMITED TO CURB, GUTTER, SIDEWALK, DRIVEWAY, SLABS, V-PAN, CURB RAMPS, INTERSECTION CORNERS, APRONS, AND LANDSCAPE BORDERS.

(15) 202 – REMOVAL OF PIPE AS SHOWN. (SIZE AND TYPE AS SHOWN ON PLAN)

(16) 202 – REMOVAL OF MANHOLE. CONTRACTOR SHALL SALVAGE RING AND COVER AND DELIVER TO CITY SHOPS

(100) 210 – RESET LANDSCAPE GROUND COVER (ROCK)

(102) 210 – RESET FENCE. CONTRACTOR TO SUPPLY AND INSTALL ANY NEW MATERIALS REQUIRED TO RESTORE THE FENCE TO ACCEPTABLE CONDITION EXCEPT FOR NEW POSTS. (HEIGHT AND MATERIAL AS SHOWN ON PLAN)

(300) 102.11/108.5 – SANITARY SEWER BASIC MANHOLE (48" I.D.). INCLUDES CONNECTION OF ADJACENT SEWER LINE, FORMING INVERTS AND ADJUSTING TO FINAL GRADE. (SEE CITY OF GRAND JUNCTION STANDARD DETAIL SS-02).

(306) 102.11/108.5 – MANHOLE BARREL SECTION (D>5') (48" I.D.).

(319) EPOXY COAT MANHOLE INVERT. COST IS INCIDENTAL TO COST OF MANHOLE INSTALLATION.

(321) 102.9/108.2 – 4" GRAVITY SEWER PIPE (SDR 35 PVC). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.

(344) 102.9/108.2 – 10" GRAVITY SEWER PIPE (SDR 35 PVC). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.

(347) 102/103/104 – CONTRACTOR SHALL FIELD VERIFY EXISTING SEWER SERVICE LOCATIONS (SEWER SERVICE LOCATIONS AND CONNECTION POINTS TO EXISTING SERVICES ARE SHOWN FOR ESTIMATING PURPOSES ONLY AND MAY VARY FROM WHAT IS SHOWN).

(354) 104.20 – INSTALL 2-WAY SANITARY SEWER SERVICE CLEANOUT (STD. DETAIL SS-07). INCLUDES CLEANOUT RING AND COVER AND CONCRETE COLLAR IN UNPAVED AREAS (SEE STD. DETAIL SS-07).

(358) 103 – CLAY CUT-OFF WALL (INCIDENTAL TO SEWER INSTALLATION PAY ITEM)

(365) 102.9B – INSTALL NEW 8" FUSIBLE PVC (FPVC) PIPE OR 8" (CERTA-LOK) RESTRAINED PVC PIPE.

(368) 102.9/108.3 – 10" x 4" SEWER SERVICE TAP. FULL BODY WYE (SEE STD. DETAIL SS-06).

(370) 102.9/108.3 – 8" x 4" SEWER SERVICE TAPPING SADDLE.

(380) CONNECT TO EXISTING SEWER PIPE. THE CONTRACT PRICE FOR SEWER PIPE SHALL INCLUDE THE COST OF CONNECTION TO EXISTING PIPELINE

(582) 608.06 – CONCRETE DRAINAGE PAN (MATCH IN KIND)

(664) 304 – AGGREGATE BASE COURSE (CLASS 6) (15" THICK)

(667) 304 – AGGREGATE BASE COURSE (CLASS 6) (6" THICK)

(684) 401.08 – HOT BITUMINOUS PAVEMENT (PATCHING) (3" THICK) (GRADING SX, PG 64-22, GYR.=75) (ONE 3" LIFT BOTTOM MAT)

(685) 401.08 – HOT BITUMINOUS PAVEMENT (PATCHING) (2" THICK) (GRADING SX, PG 64-22, GYR.=75) (ONE 2" LIFT TOP MAT) (T-TOP PATCH)

(780) 208 – STORM DRAIN INLET PROTECTION (SILT-SACK) (INCLUDES MAINTENANCE AND REMOVAL OF DIRT AND DEBRIS)

(846) POTHOLE EXISTING UTILITY AHEAD OF CONSTRUCTION. COORDINATE ANY NEEDED DESIGN CHANGES WITH PROJECT ENGINEER SO AS TO AVOID UTILITY CONFLICTS.

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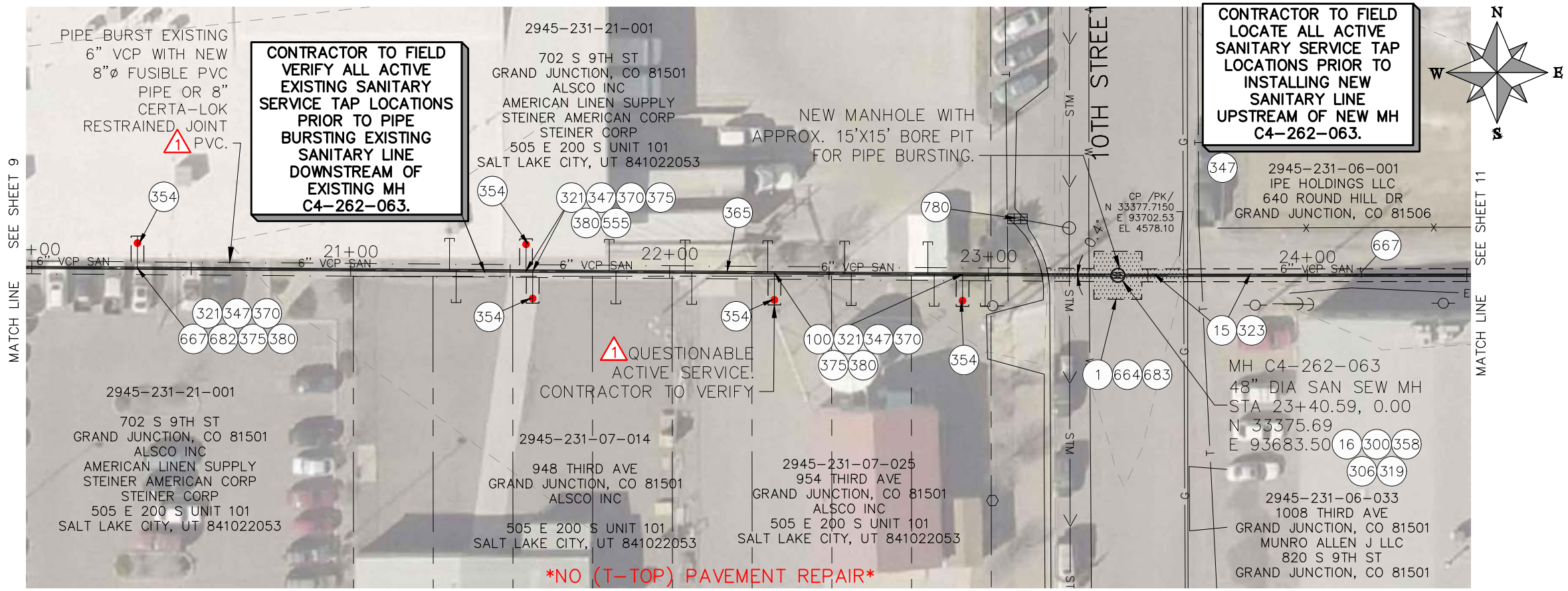
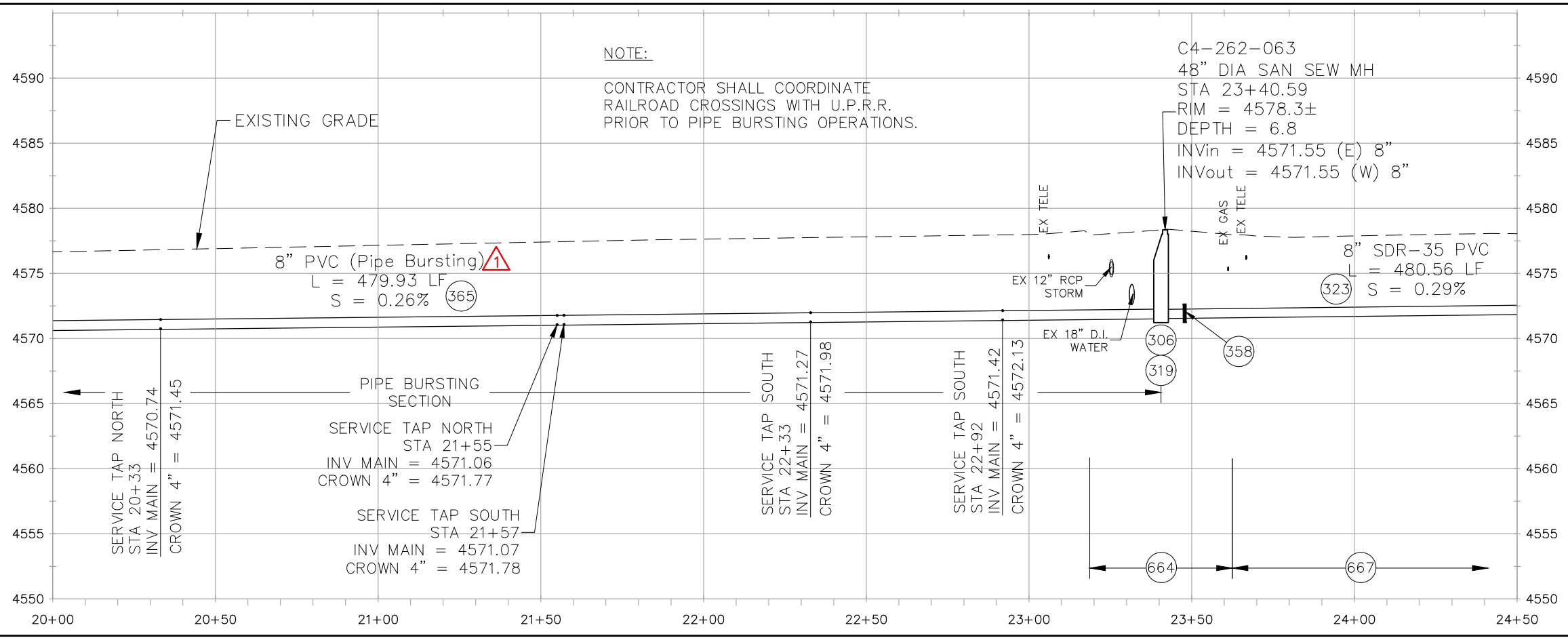
CITY OF Grand Junction COLORADO

PUBLIC WORKS
ENGINEERING DIVISION

2018 SEWER LINE REPLACEMENT – PHASE A
3RD AVENUE ALLEY PLAN AND PROFILE
STA 15+20 TO STA 20+00

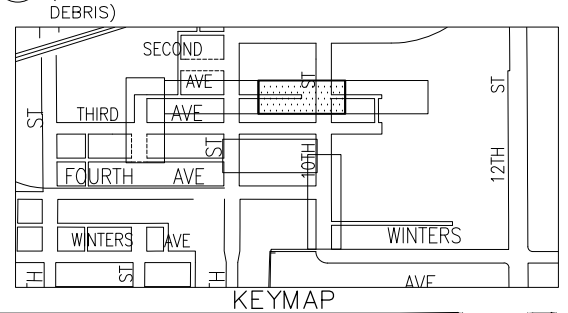




PROJECT NO. 902-F001633

CONSTRUCTION NOTES

1. 202 – REMOVAL OF ASPHALT MAT. CUT AND REMOVE ASPHALT AS SHOWN. (INDICATED BY DOT HATCH PATTERN)
15. 202 – REMOVAL OF PIPE AS SHOWN. (SIZE AND TYPE AS SHOWN ON PLAN)
16. 202 – REMOVAL OF MANHOLE. CONTRACTOR SHALL SALVAGE RING AND COVER AND DELIVER TO CITY SHOPS
100. 210 – RESET LANDSCAPE GROUND COVER (ROCK)
300. 102.11/108.5 – SANITARY SEWER BASIC MANHOLE (48" I.D.). INCLUDES CONNECTION OF ADJACENT SEWER LINE, FORMING INVERTS AND ADJUSTING TO FINAL GRADE. (SEE CITY OF GRAND JUNCTION STANDARD DETAIL SS-02).
306. 102.11/108.5 – MANHOLE BARREL SECTION (D>5') (48" I.D.).
319. EPOXY COAT MANHOLE INVERT. COST IS INCIDENTAL TO COST OF MANHOLE INSTALLATION.
321. 102.9/108.2 – 4" GRAVITY SEWER PIPE (SDR 35 PVC). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.
323. 102.9/108.2 – 8" GRAVITY SEWER PIPE (SDR 35 PVC). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.
347. 102/103/104 – CONTRACTOR SHALL FIELD VERIFY EXISTING SEWER SERVICE LOCATIONS (SEWER SERVICE LOCATIONS AND CONNECTION POINTS TO EXISTING SERVICES ARE SHOWN FOR ESTIMATING PURPOSES ONLY AND MAY VARY FROM WHAT IS SHOWN).
354. 104.20 – INSTALL 2-WAY SANITARY SEWER SERVICE CLEANOUT (STD. DETAIL SS-07). INCLUDES CLEANOUT RING AND COVER AND CONCRETE COLLAR IN UNPAVED AREAS (SEE STD. DETAIL SS-07).
358. 103 – CLAY CUT-OFF WALL (INCIDENTAL TO SEWER INSTALLATION PAY ITEM)
365. 102.9B – INSTALL NEW 8" FUSIBLE PVC (FPVC) PIPE OR 8" (CERTA-LOK) RESTRAINED PVC PIPE.
370. 102.9/108.3 – 8" x 4" SEWER SERVICE TAPPING SADDLE.
375. 102.9/104.2/108.2 – 4" SEWER SERVICE TAP TO INCLUDE: DISCONNECTING EXISTING SERVICE AND INSTALLING NEW SERVICE TAP. NEW TAP SHALL BE (W/ APPROVAL OF ENGINEER OR INSPECTOR ON CASE-SPECIFIC BASIS): FULL BODY WYE W/ STREET 45 (PIPE STUBS AND COUPLINGS INCLUDED), INSERTA-TEE, OR SADDLE; ALL BENDS AND FITTINGS, CLEANOUT, VERTICAL PIPING, CLEANOUT RING & COVER AND CONCRETE COLLAR, AS REQUIRED, TO ALIGN AND CONNECT TO EXISTING SERVICE AT ROW LINE. FOR 4" SERVICE PIPE (SEE CITY OF GRAND JUNCTION STD. DETAIL "TYPICAL SERVICE "Y" CONNECTION" SS-06 AND SS-07).
380. CONNECT TO EXISTING SEWER PIPE. THE CONTRACT PRICE FOR SEWER PIPE SHALL INCLUDE THE COST OF CONNECTION TO EXISTING PIPELINE
555. 608.06 – CONCRETE SIDEWALK (4" THICK) (MATCH IN KIND)
664. 304 – AGGREGATE BASE COURSE (CLASS 6) (15" THICK)
667. 304 – AGGREGATE BASE COURSE (CLASS 6) (6" THICK)
682. 401.08 – HOT BITUMINOUS PAVEMENT (PATCHING) (3" THICK) (GRADING SX, PG 64-22, GYR.=75) (ONE 3" LIFT)
683. 401.08 – HOT BITUMINOUS PAVEMENT (PATCHING) (5" THICK) (GRADING SX, PG 64-22, GYR.=75) (TWO LIFTS)
780. 208 – STORM DRAIN INLET PROTECTION (SILT-SACK) (INCLUDES MAINTENANCE AND REMOVAL OF DIRT AND DEBRIS)



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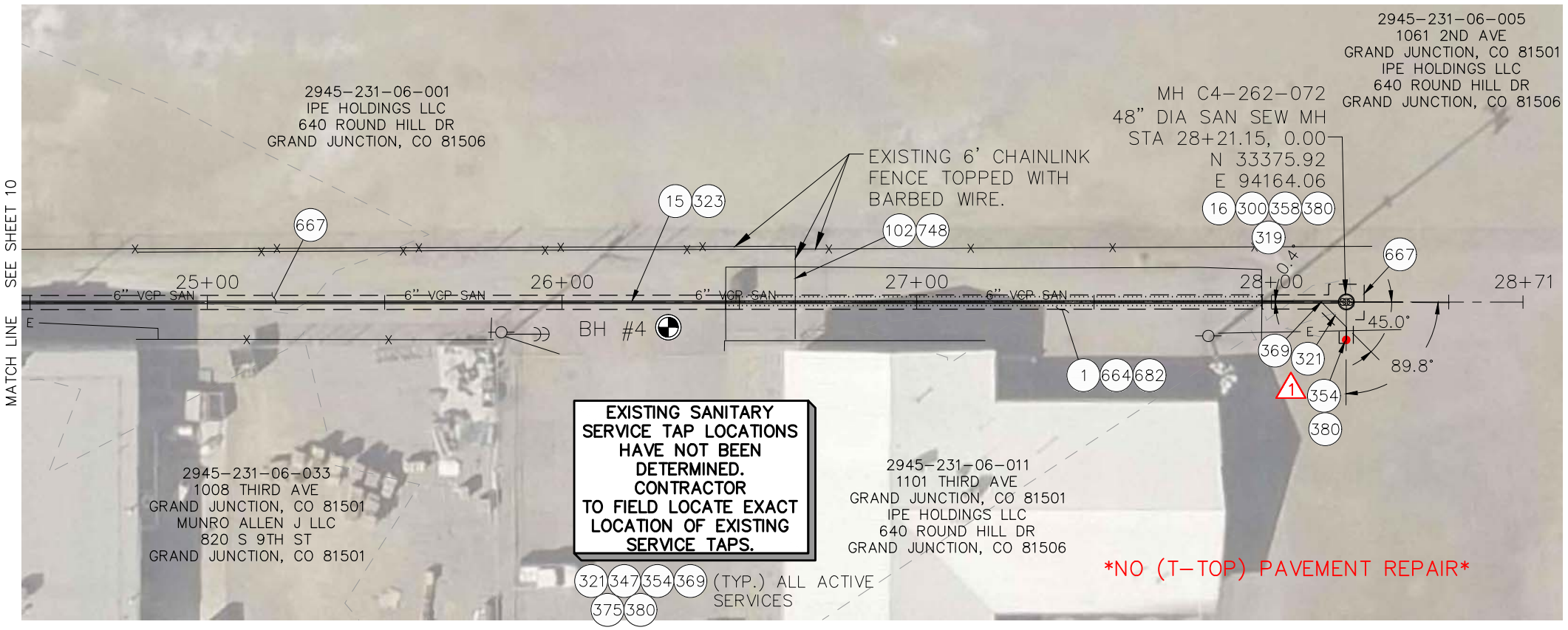
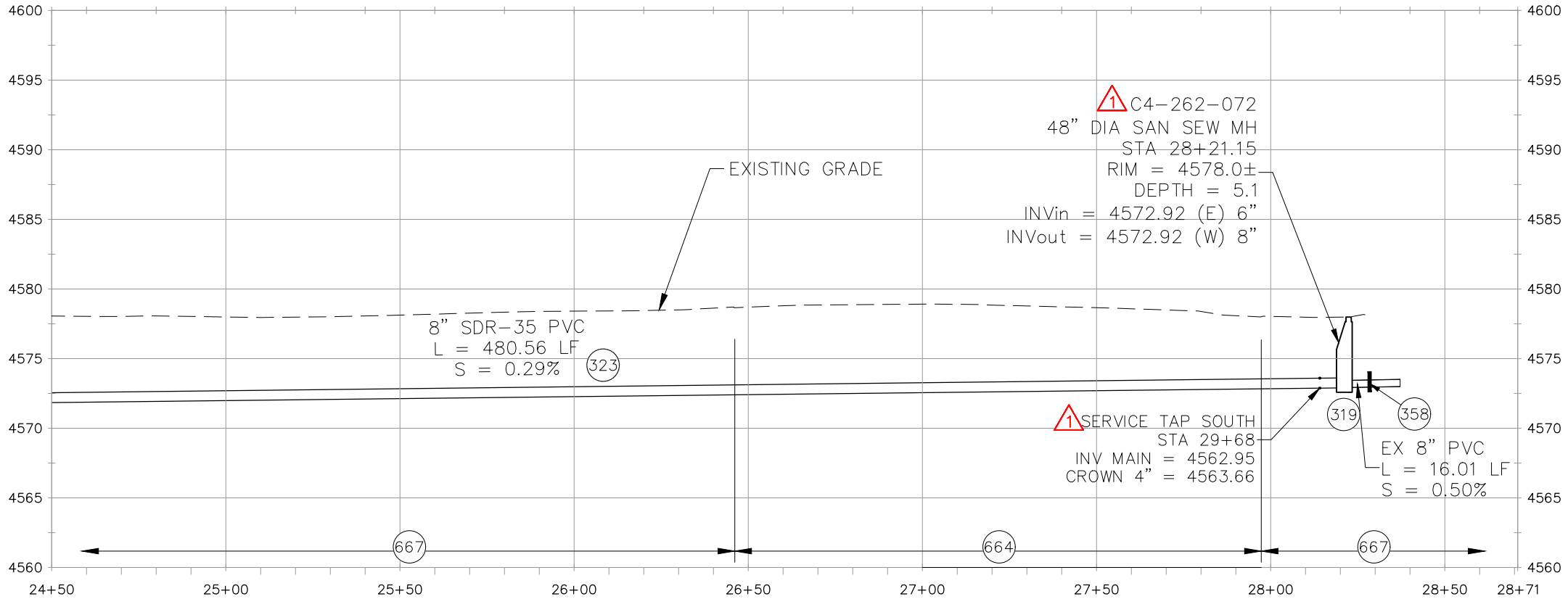
CITY OF Grand Junction COLORADO

PUBLIC WORKS
ENGINEERING DIVISION

2018 SEWER LINE REPLACEMENT – PHASE A
3RD AVENUE ALLEY PLAN AND PROFILE
STA 20+00 TO STA 24+50

10





PROJECT NO. 902-F001633

CONSTRUCTION NOTES

(1) 202 – REMOVAL OF ASPHALT MAT. CUT AND REMOVE ASPHALT AS SHOWN. (INDICATED BY DOT HATCH PATTERN)

(15) 202 – REMOVAL OF PIPE AS SHOWN. (SIZE AND TYPE AS SHOWN ON PLAN)

(16) 202 – REMOVAL OF MANHOLE. CONTRACTOR SHALL SALVAGE RING AND COVER AND DELIVER TO CITY SHOPS

(102) 210 – RESET FENCE. CONTRACTOR TO SUPPLY AND INSTALL ANY NEW MATERIALS REQUIRED TO RESTORE THE FENCE TO ACCEPTABLE CONDITION EXCEPT FOR NEW POSTS. (HEIGHT AND MATERIAL AS SHOWN ON PLAN)

(300) 102.11/108.5 – SANITARY SEWER BASIC MANHOLE (48" I.D.). INCLUDES CONNECTION OF ADJACENT SEWER LINE, FORMING INVERTS AND ADJUSTING TO FINAL GRADE. (SEE CITY OF GRAND JUNCTION STANDARD DETAIL SS-02).

(319) EPOXY COAT MANHOLE INVERTS. COST IS INCIDENTAL TO COST OF MANHOLE INSTALLATION.

(321) 102.9/108.2 – 4" GRAVITY SEWER PIPE (SDR 35 PVC). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.

(323) 102.9/108.2 – 8" GRAVITY SEWER PIPE (SDR 35 PVC). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.

(347) 102/103/104 – CONTRACTOR SHALL FIELD VERIFY EXISTING SEWER SERVICE LOCATIONS (SEWER SERVICE LOCATIONS AND CONNECTION POINTS TO EXISTING SERVICES ARE SHOWN FOR ESTIMATING PURPOSES ONLY AND MAY VARY FROM WHAT IS SHOWN).

(354) 104.20 – INSTALL 2-WAY SANITARY SEWER SERVICE CLEANOUT (STD. DETAIL SS-07). INCLUDES CLEANOUT RING AND COVER AND CONCRETE COLLAR IN UNPAVED AREAS (SEE STD. DETAIL SS-07).

(358) 103 – CLAY CUT-OFF WALL (INCIDENTAL TO SEWER INSTALLATION PAY ITEM)

(369) 102.9/108.3 – 8" x 4" SEWER SERVICE TAP. FULL BODY WYE (SEE STD. DETAIL SS-06).

(375) 102.9/104.2/108.2 – 4" SEWER SERVICE TAP TO INCLUDE: DISCONNECTING EXISTING SERVICE AND INSTALLING NEW SERVICE TAP. NEW TAP SHALL BE (W/ APPROVAL OF ENGINEER OR INSPECTOR ON CASE-SPECIFIC BASIS): FULL BODY WYE W/ STREET 45 (PIPE STUBS AND COUPLINGS INCLUDED), INSERTA-TEE, OR SADDLE; ALL BENDS AND FITTINGS, CLEANOUT, VERTICAL PIPING, CLEANOUT RING & COVER AND CONCRETE COLLAR, AS REQUIRED, TO ALIGN AND CONNECT TO EXISTING SERVICE AT ROW LINE. FOR 4" SERVICE PIPE (SEE CITY OF GRAND JUNCTION STD. DETAIL "TYPICAL SERVICE "Y" CONNECTION" SS-06 AND SS-07).

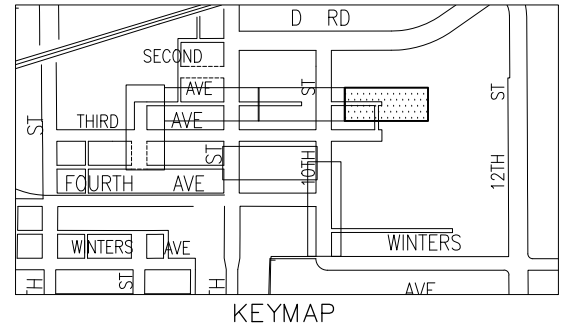
(380) CONNECT TO EXISTING SEWER PIPE. THE CONTRACT PRICE FOR SEWER PIPE SHALL INCLUDE THE COST OF CONNECTION TO EXISTING PIPELINE

(664) 304 – AGGREGATE BASE COURSE (CLASS 6) (15" THICK)

(667) 304 – AGGREGATE BASE COURSE (CLASS 6) (6" THICK)

(682) 401.08 – HOT BITUMINOUS PAVEMENT (PATCHING) (3" THICK) (GRADING SX, PG 64-22, GYR.=75) (ONE 3" LIFT)

(748) 607 – LINE POST (MATCH IN KIND)(IF NECESSARY)



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PUBLIC WORKS
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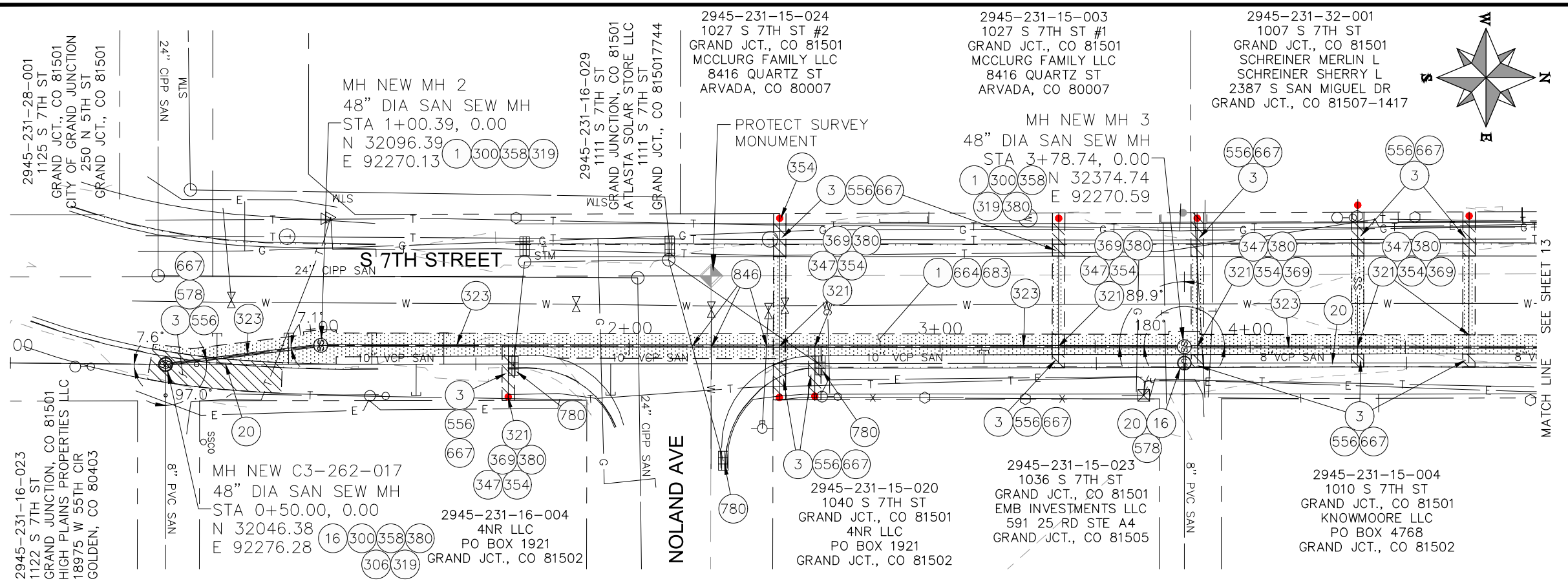
2018 SEWER LINE REPLACEMENT – PHASE A
3RD AVENUE ALLEY PLAN AND PROFILE
STA 24+50 TO STA 28+71

11



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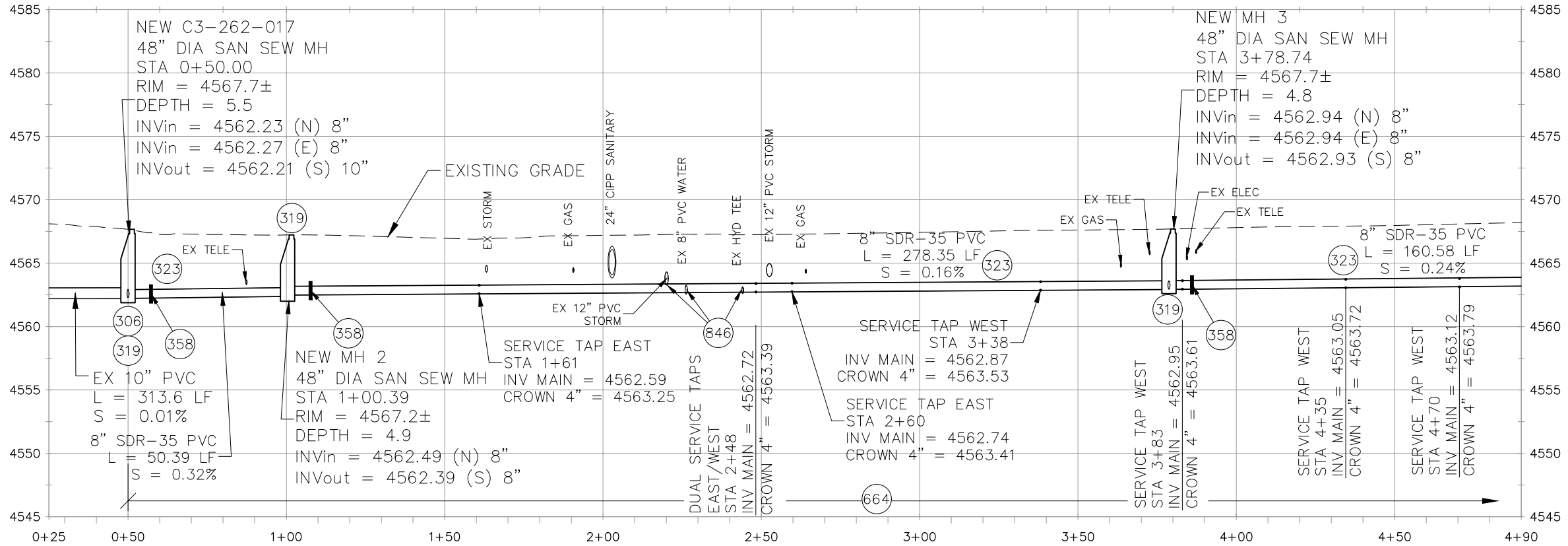

PROJECT NO. 902-F001633

CONSTRUCTION NOTES

(1) 202 – REMOVAL OF ASPHALT MAT. CUT AND REMOVE ASPHALT AS SHOWN. (INDICATED BY DOT HATCH PATTERN)

(3) 202 – REMOVAL OF CONCRETE. SAW CUT AND REMOVE CONCRETE AS SHOWN. (INDICATED BY CROSS HATCH PATTERN) INCLUDES BUT NOT LIMITED TO CURB, GUTTER, SIDEWALK, DRIVEWAY, SLABS, V-PAN, CURB RAMPS, INTERSECTION CORNERS, APRONS, AND LANDSCAPE BORDERS.

(16) 202 – REMOVAL OF MANHOLE. CONTRACTOR SHALL SALVAGE RING AND COVER AND DELIVER TO CITY SHOPS

(20) 202 – ABANDON PIPE. ABANDON BY PLUGGING REMAINING ENDS WITH CONCRETE.

(300) 102.11/108.5 – SANITARY SEWER BASIC MANHOLE (48" I.D.). INCLUDES CONNECTION OF ADJACENT SEWER LINE, FORMING INVERTS AND ADJUSTING TO FINAL GRADE. (SEE CITY OF GRAND JUNCTION STANDARD DETAIL SS-02).

(306) 102.11/108.5 – MANHOLE BARREL SECTION (D>5') (48" I.D.).

(319) EPOXY COAT MANHOLE INVERT. COST IS INCIDENTAL TO COST OF MANHOLE INSTALLATION.

(321) 102.9/108.2 – 4" GRAVITY SEWER PIPE (SDR 35 PVC). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.

(323) 102.9/108.2 – 8" GRAVITY SEWER PIPE (SDR 35 PVC). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.

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(358) 103 – CLAY CUT-OFF WALL (INCIDENTAL TO SEWER INSTALLATION PAY ITEM)

(369) 102.9/108.3 – 8" x 4" SEWER SERVICE TAP. FULL BODY WYE (SEE STD. DETAIL SS-06).

(380) CONNECT TO EXISTING SEWER PIPE. THE CONTRACT PRICE FOR SEWER PIPE SHALL INCLUDE THE COST OF CONNECTION TO EXISTING PIPELINE

(556) 608.06 – CONCRETE CURB, GUTTER, AND SIDEWALK (MATCH IN KIND)

(578) 608.06 – CONCRETE DRIVEWAY SECTION (8" SECTION)

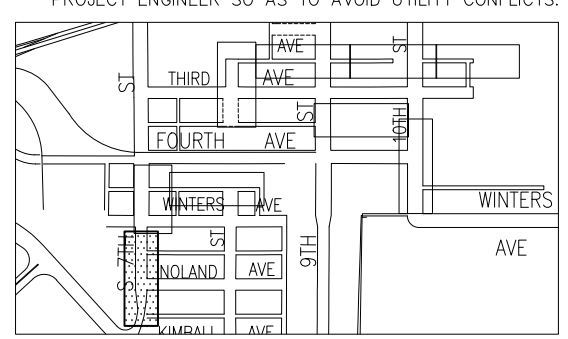
(664) 304 – AGGREGATE BASE COURSE (CLASS 6) (15" THICK)

(667) 304 – AGGREGATE BASE COURSE (CLASS 6) (6" THICK)

(683) 401.08 – HOT BITUMINOUS PAVEMENT (PATCHING) (5" THICK) (GRADING SX, PG 64-22, GYR.=75) (TWO LIFTS)

(780) 208 – STORM DRAIN INLET PROTECTION (SILT-SACK) (INCLUDES MAINTENANCE AND REMOVAL OF DIRT AND DEBRIS)

(846) POTHOLE EXISTING UTILITY AHEAD OF CONSTRUCTION. COORDINATE ANY NEEDED DESIGN CHANGES WITH PROJECT ENGINEER SO AS TO AVOID UTILITY CONFLICTS.



KEYMAP

DESCRIPTION		DATE
REVISION 1	ADDENDUM #1 – REVISED PLANS	04/09/18
REVISION 2		
REVISION 3		
REVISION 4		

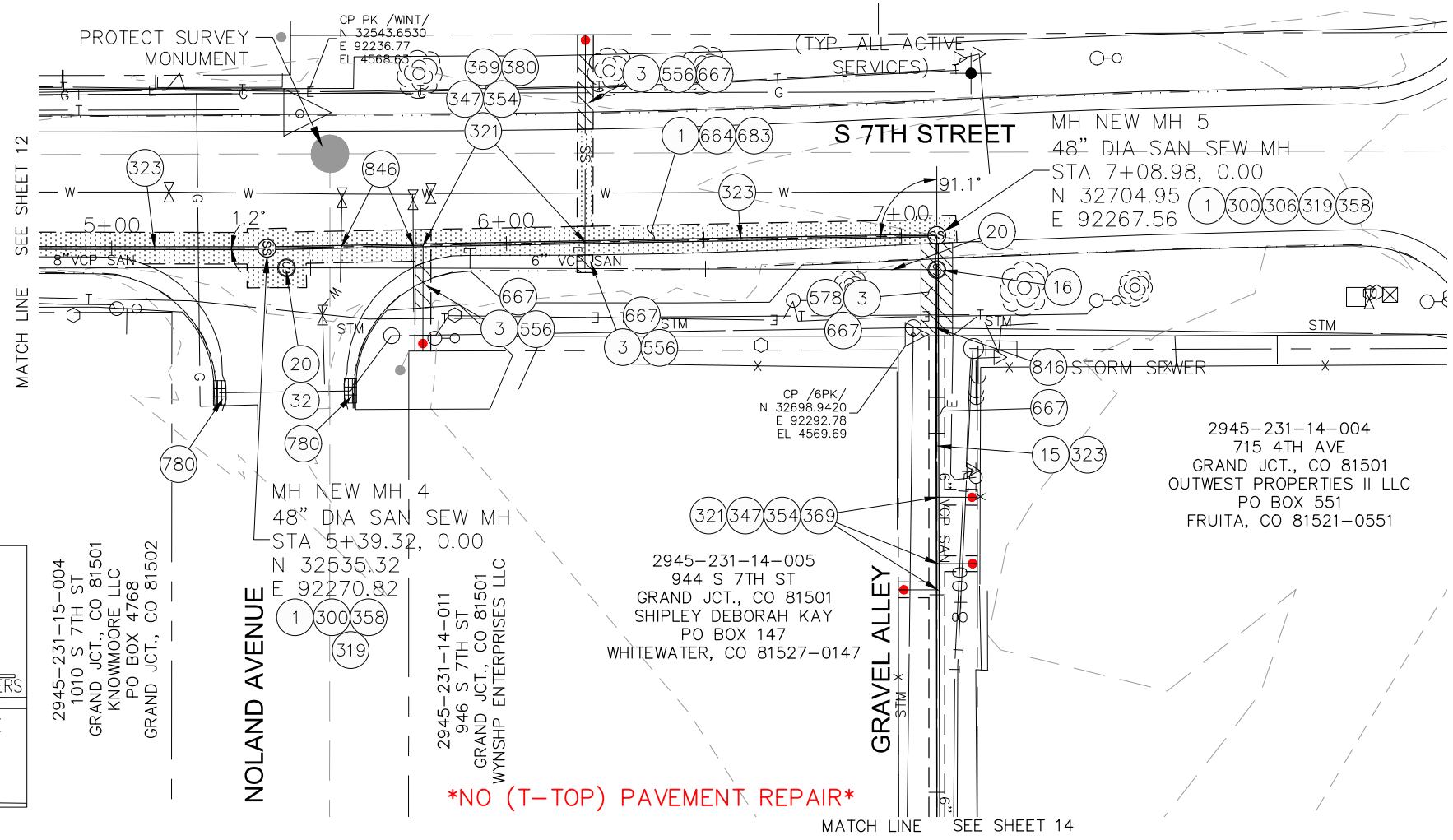
DRAWN BY BCH DATE 03/2/18
DESIGNED BY BCH DATE 03/2/18
CHECKED BY ALC DATE
APPROVED BY ALC DATE

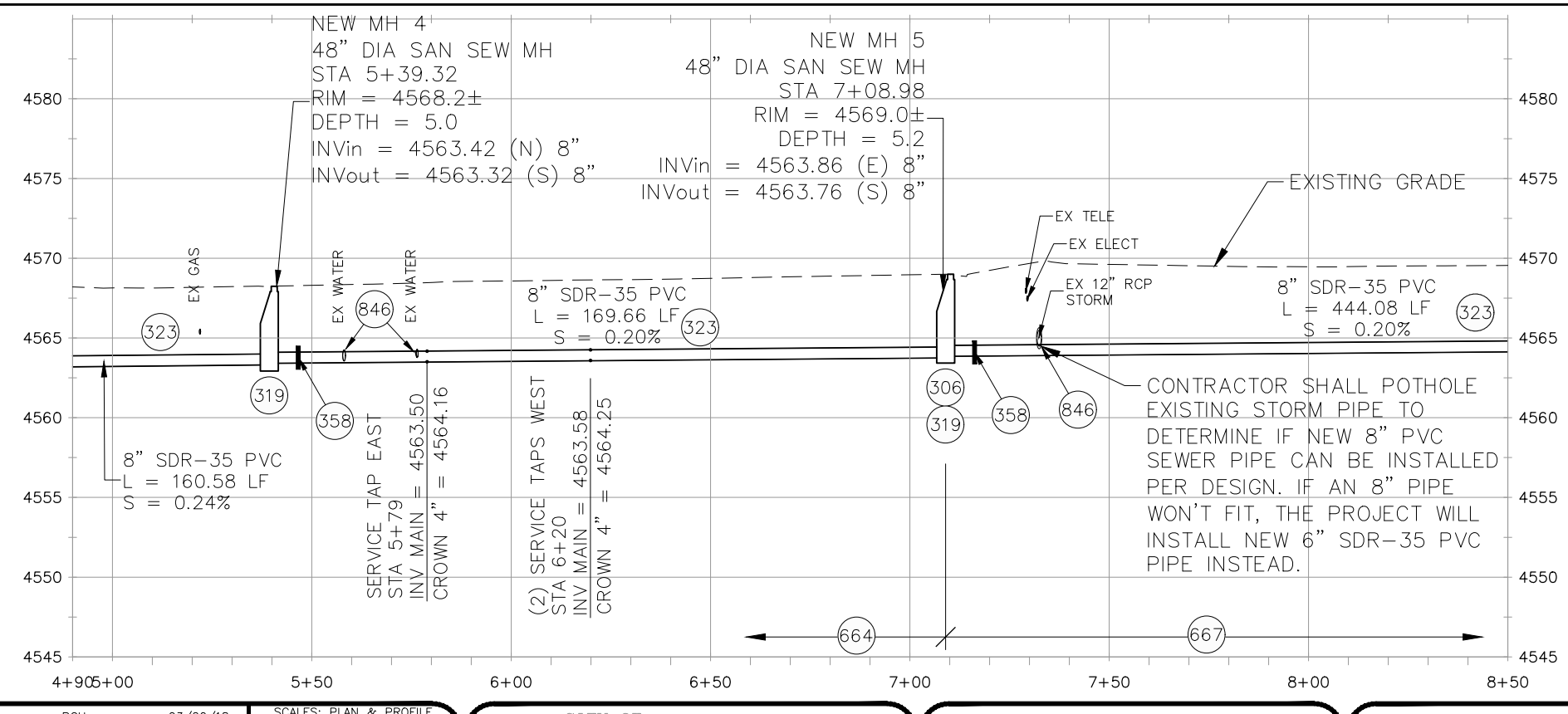
SCALES: PLAN & PROFILE
HORIZONTAL: 1" = 40'
VERTICAL: 1" = 10'

CITY OF Grand Junction COLORADO

PUBLIC WORKS
ENGINEERING DIVISION

2018 SEWER LINE REPLACEMENT – PHASE A
S 7TH STREET PLAN AND PROFILE
STA 0+00 TO STA 4+90





PROJECT NO. 902-F001633

CONSTRUCTION NOTES

1. 202 – REMOVAL OF ASPHALT MAT. CUT AND REMOVE ASPHALT AS SHOWN. (INDICATED BY DOT HATCH PATTERN)
3. 202 – REMOVAL OF CONCRETE. SAW CUT AND REMOVE CONCRETE AS SHOWN. (INDICATED BY CROSS HATCH PATTERN) INCLUDES BUT NOT LIMITED TO CURB, GUTTER, SIDEWALK, DRIVEWAY, SLABS, V-PAN, CURB RAMPS, INTERSECTION CORNERS, APRONS, AND LANDSCAPE BORDERS.
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16. 202 – REMOVAL OF MANHOLE. CONTRACTOR SHALL SALVAGE RING AND COVER AND DELIVER TO CITY SHOPS
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32. 202 – ABANDON MANHOLE. REMOVE RING COVER AND CONE SECTION. BACKFILL WITH IMPORTED PIT RUN.
300. 102.11/108.5 – SANITARY SEWER BASIC MANHOLE (48" I.D.). INCLUDES CONNECTION OF ADJACENT SEWER LINE, FORMING INVERTS AND ADJUSTING TO FINAL GRADE. (SEE CITY OF GRAND JUNCTION STANDARD DETAIL SS-02).
306. 102.11/108.5 – MANHOLE BARREL SECTION (D>5') (48" I.D.).
319. EPOXY COAT MANHOLE INVERT. COST IS INCIDENTAL TO COST OF MANHOLE INSTALLATION.
321. 102.9/108.2 – 4" GRAVITY SEWER PIPE (SDR 35 PVC). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.
323. 102.9/108.2 – 8" GRAVITY SEWER PIPE (SDR 35 PVC). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.
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354. 104.20 – INSTALL 2-WAY SANITARY SEWER SERVICE CLEANOUT (STD. DETAIL SS-07). INCLUDES CLEANOUT RING AND COVER AND CONCRETE COLLAR IN UNPAVED AREAS (SEE STD. DETAIL SS-07).
358. 103 – CLAY CUT-OFF WALL (INCIDENTAL TO SEWER INSTALLATION PAY ITEM)
369. 102.9/108.3 – 8" x 4" SEWER SERVICE TAP. FULL BODY WYE (SEE STD. DETAIL SS-06).
380. CONNECT TO EXISTING SEWER PIPE. THE CONTRACT PRICE FOR SEWER PIPE SHALL INCLUDE THE COST OF CONNECTION TO EXISTING PIPELINE
556. 608.06 – CONCRETE CURB, GUTTER, AND SIDEWALK (MATCH IN KIND)
578. 608.06 – CONCRETE DRIVEWAY SECTION (8" SECTION)
664. 304 – AGGREGATE BASE COURSE (CLASS 6) (15" THICK)
667. 304 – AGGREGATE BASE COURSE (CLASS 6) (6" THICK)
683. 401.08 – HOT BITUMINOUS PAVEMENT (PATCHING) (5" THICK) (GRADING SX, PG 64-22, GYR.=75) (TWO LIFTS)
780. 208 – STORM DRAIN INLET PROTECTION (SILT-SACK) (INCLUDES MAINTENANCE AND REMOVAL OF DIRT AND DEBRIS)
846. POTHOLE EXISTING UTILITY AHEAD OF CONSTRUCTION. COORDINATE ANY NEEDED DESIGN CHANGES WITH PROJECT ENGINEER SO AS TO AVOID UTILITY CONFLICTS.

DESCRIPTION	DATE
REVISION 1 ADDENDUM #1 – REVISED PLANS	04/09/18
REVISION 2	
REVISION 3	
REVISION 4	

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DESIGNED BY BCH DATE 03/20/18
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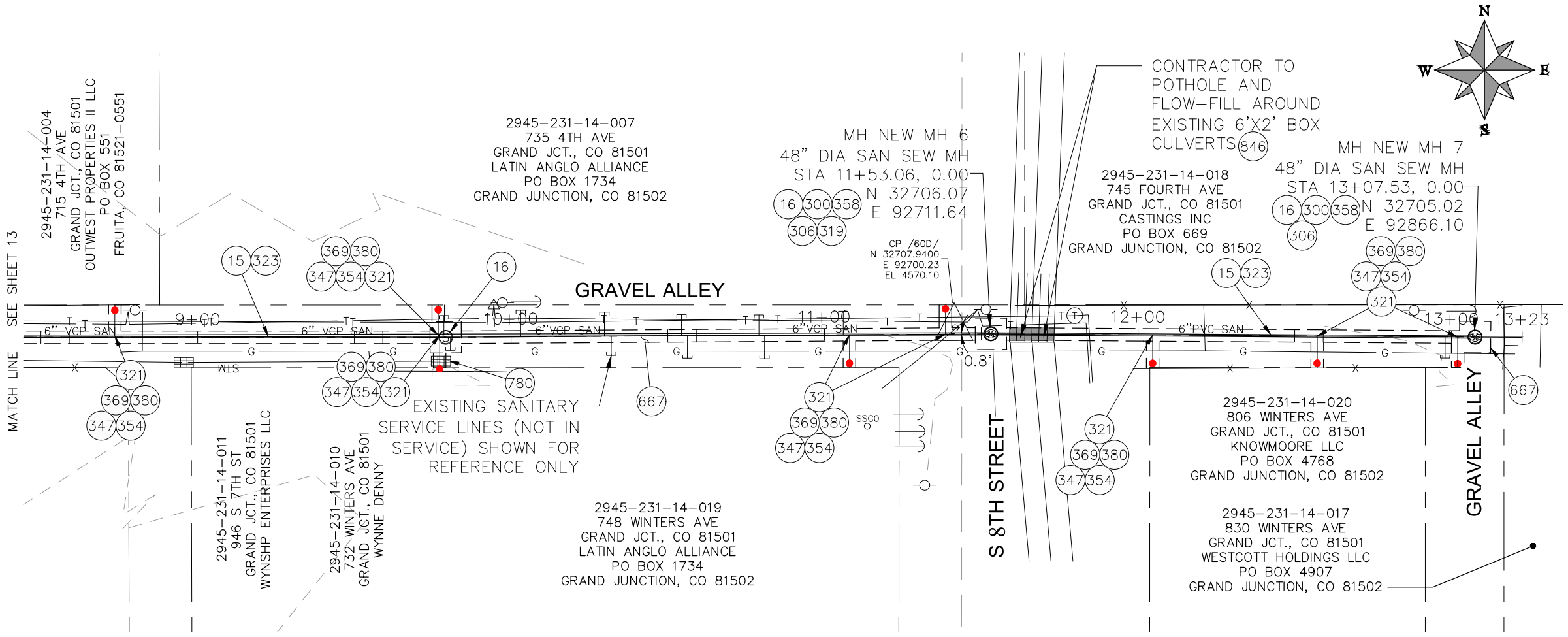
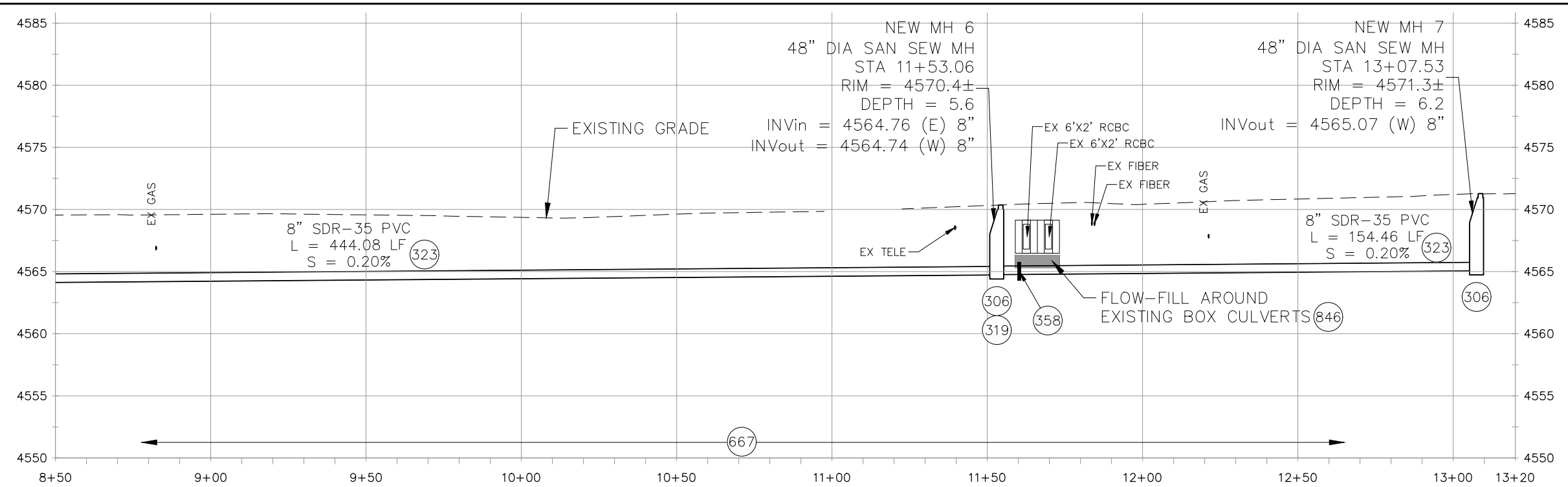
CITY OF Grand Junction COLORADO

PUBLIC WORKS
ENGINEERING DIVISION

2018 SEWER LINE REPLACEMENT – PHASE A
S 7TH STREET PLAN AND PROFILE
STA 4+90 TO STA 8+50





PROJECT NO. 902-F001633

CONSTRUCTION NOTES

(15) 202 – REMOVAL OF PIPE AS SHOWN. (SIZE AND TYPE AS SHOWN ON PLAN)

(16) 202 – REMOVAL OF MANHOLE. CONTRACTOR SHALL SALVAGE RING AND COVER AND DELIVER TO CITY SHOPS

(300) 102.11/108.5 – SANITARY SEWER BASIC MANHOLE (48" I.D.). INCLUDES CONNECTION OF ADJACENT SEWER LINE, FORMING INVERTS AND ADJUSTING TO FINAL GRADE. (SEE CITY OF GRAND JUNCTION STANDARD DETAIL SS-02).

(306) 102.11/108.5 – MANHOLE BARREL SECTION (D>5') (48" I.D.).

(319) EPOXY COAT MANHOLE INVERT. COST IS INCIDENTAL TO COST OF MANHOLE INSTALLATION.

(321) 102.9/108.2 – 4" GRAVITY SEWER PIPE (SDR 35 PVC). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.

(323) 102.9/108.2 – 8" GRAVITY SEWER PIPE (SDR 35 PVC). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.

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(354) 104.20 – INSTALL 2-WAY SANITARY SEWER SERVICE CLEANOUT (STD. DETAIL SS-07). INCLUDES CLEANOUT RING AND COVER AND CONCRETE COLLAR IN UNPAVED AREAS (SEE STD. DETAIL SS-07).

(358) 103 – CLAY CUT-OFF WALL (INCIDENTAL TO SEWER INSTALLATION PAY ITEM)

(369) 102.9/108.3 – 8" x 4" SEWER SERVICE TAP. FULL BODY WYE (SEE STD. DETAIL SS-06).

(380) CONNECT TO EXISTING SEWER PIPE. THE CONTRACT PRICE FOR SEWER PIPE SHALL INCLUDE THE COST OF CONNECTION TO EXISTING PIPELINE

(667) 304 – AGGREGATE BASE COURSE (CLASS 6) (6" THICK)

(780) 208 – STORM DRAIN INLET PROTECTION (SILT-SACK) (INCLUDES MAINTENANCE AND REMOVAL OF DIRT AND DEBRIS)

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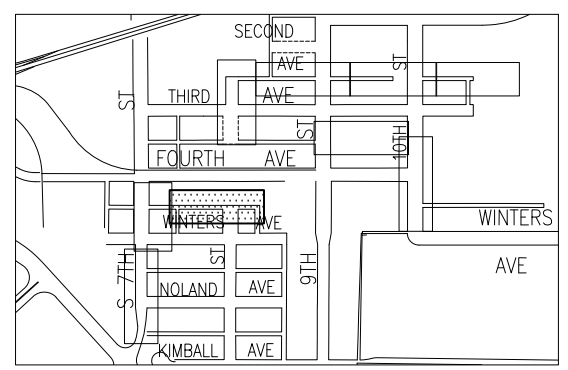

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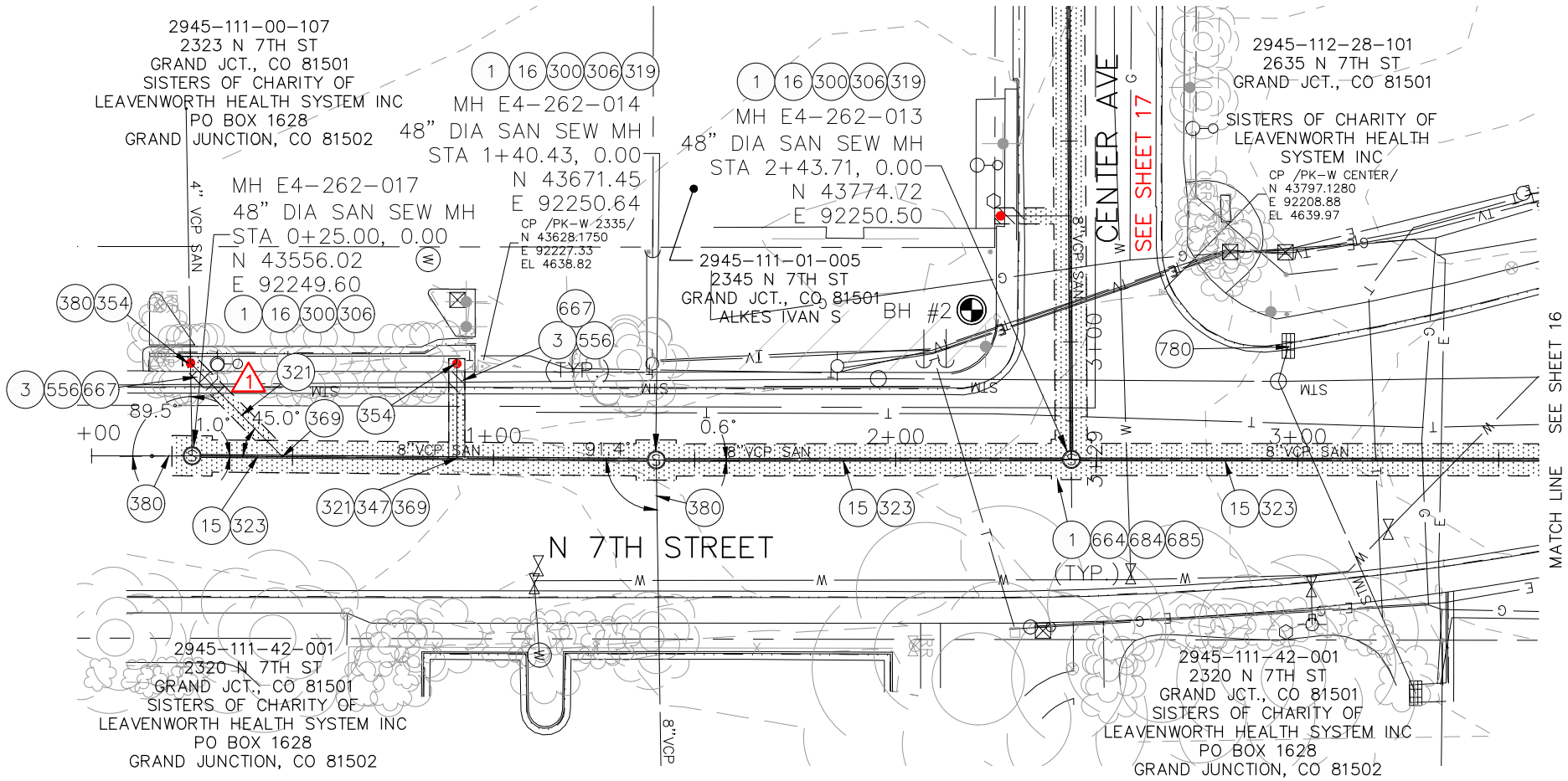
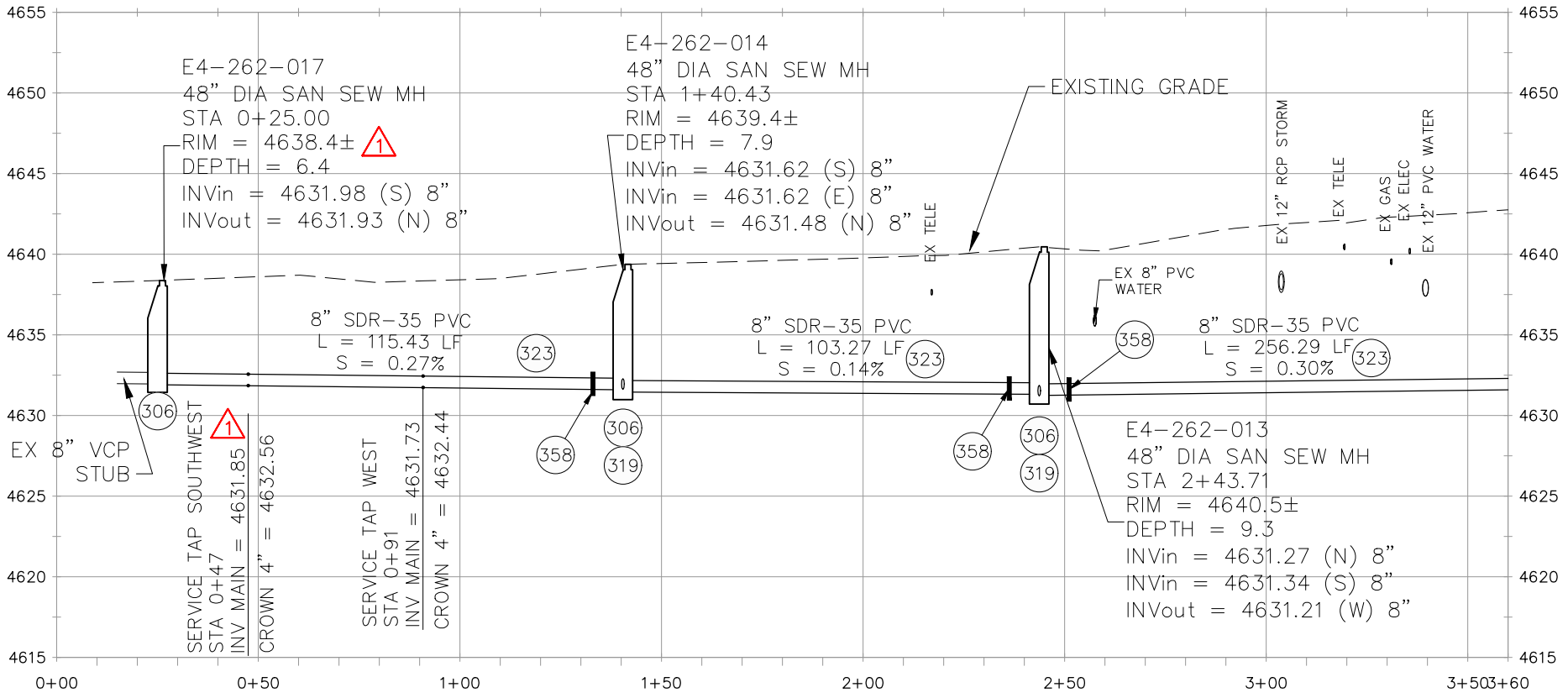
SCALES: PLAN & PROFILE
HORIZONTAL: 1" = 40'
0 10 20 40
VERTICAL: 1" = 10'
0 2.5 5 10

CITY OF Grand Junction COLORADO

PUBLIC WORKS
ENGINEERING DIVISION

2018 SEWER LINE REPLACEMENT – PHASE A
S 7TH STREET/ALLEY PLAN AND PROFILE
STA 8+50 TO STA 13+20





PROJECT NO. 902-F001633

CONSTRUCTION NOTES

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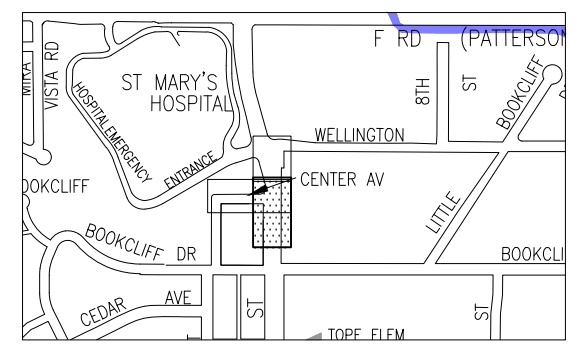

KEYMAP

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REVISION 1 ADDENDUM #1 – REVISED PLANS	04/09/18
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REVISION 3	
REVISION 4	

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SCALES: PLAN & PROFILE
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0 10 20 40
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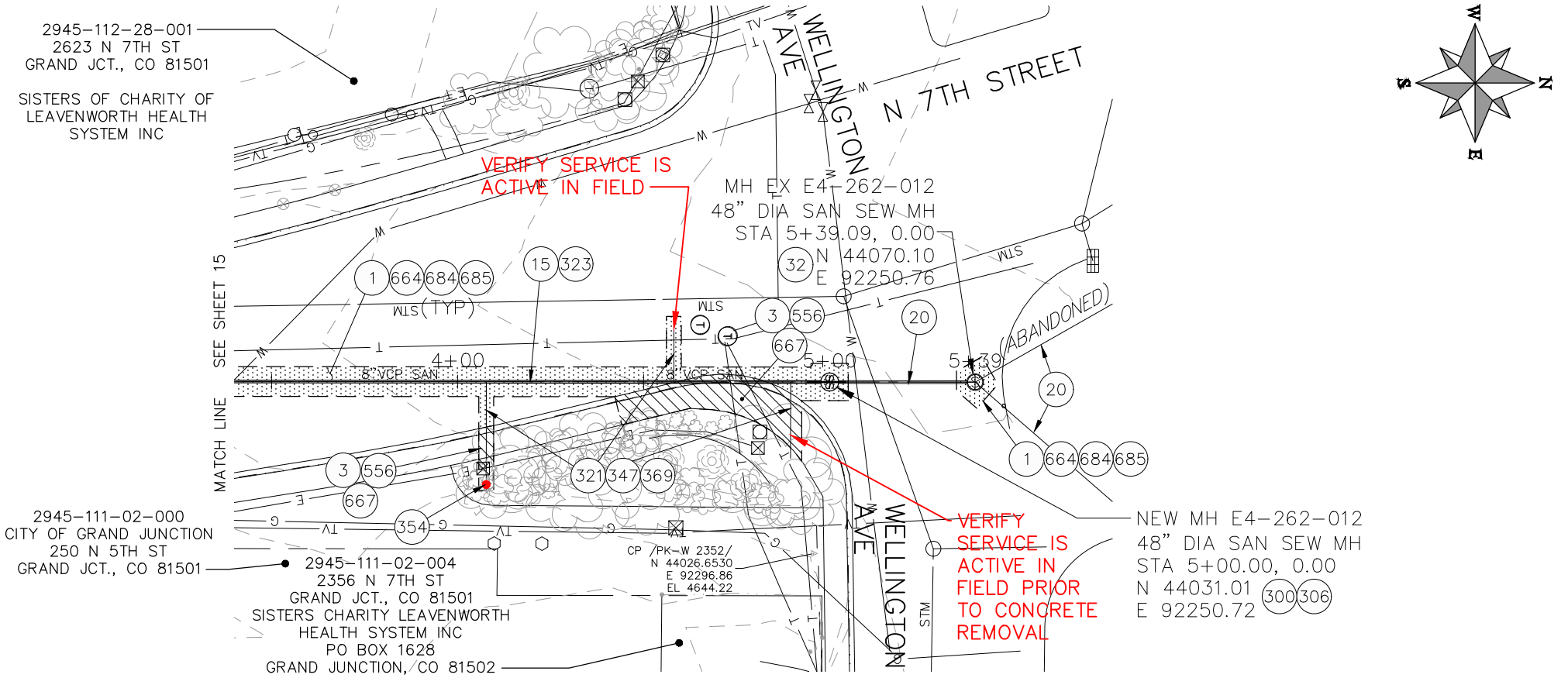
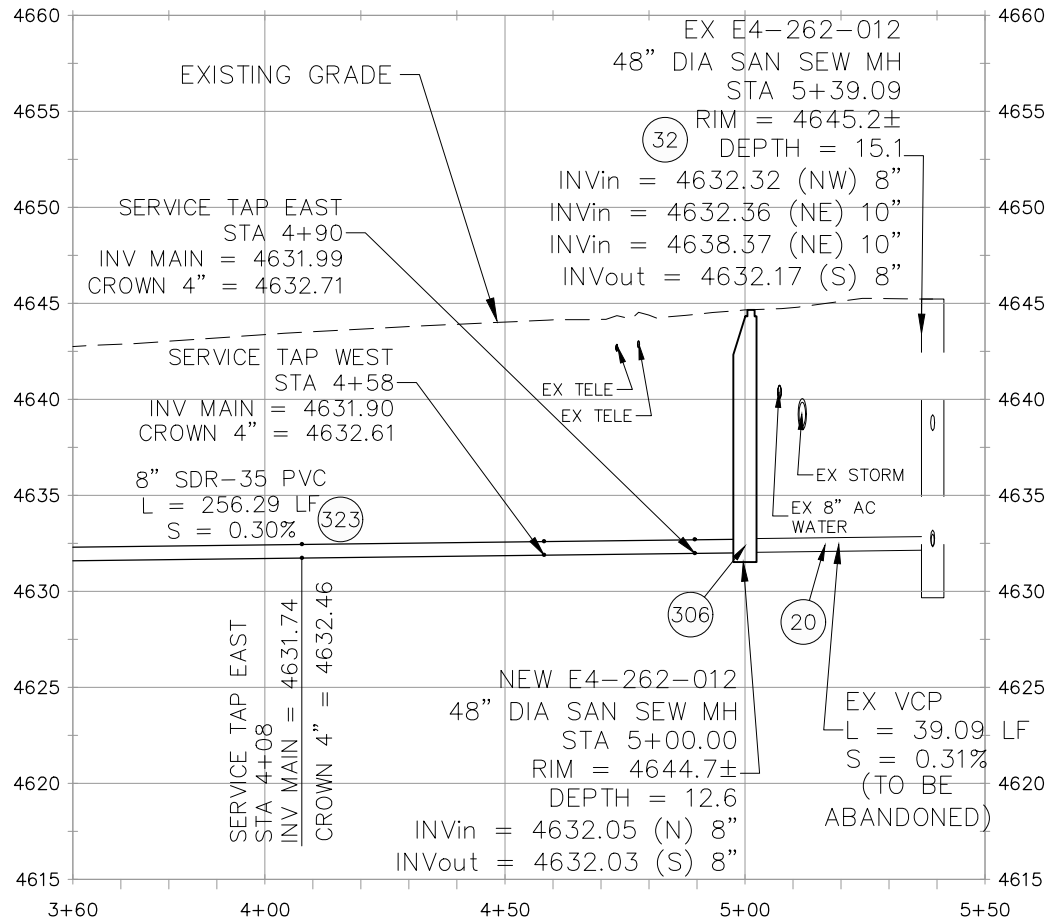
CITY OF Grand Junction COLORADO

PUBLIC WORKS
ENGINEERING DIVISION

2018 SEWER LINE REPLACEMENT – PHASE A
N 7TH STREET PLAN AND PROFILE
STA 0+00 TO STA 3+60





PROJECT NO. 902-F001633

CONSTRUCTION NOTES

1. 202 – REMOVAL OF ASPHALT MAT. CUT AND REMOVE ASPHALT AS SHOWN. (INDICATED BY DOT HATCH PATTERN)
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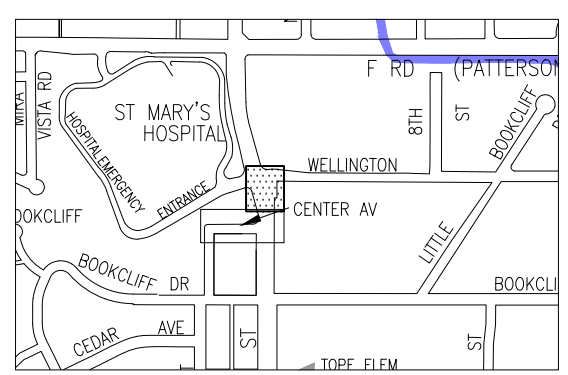

KEYMAP

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SCALES: PLAN & PROFILE
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0 10 20 40
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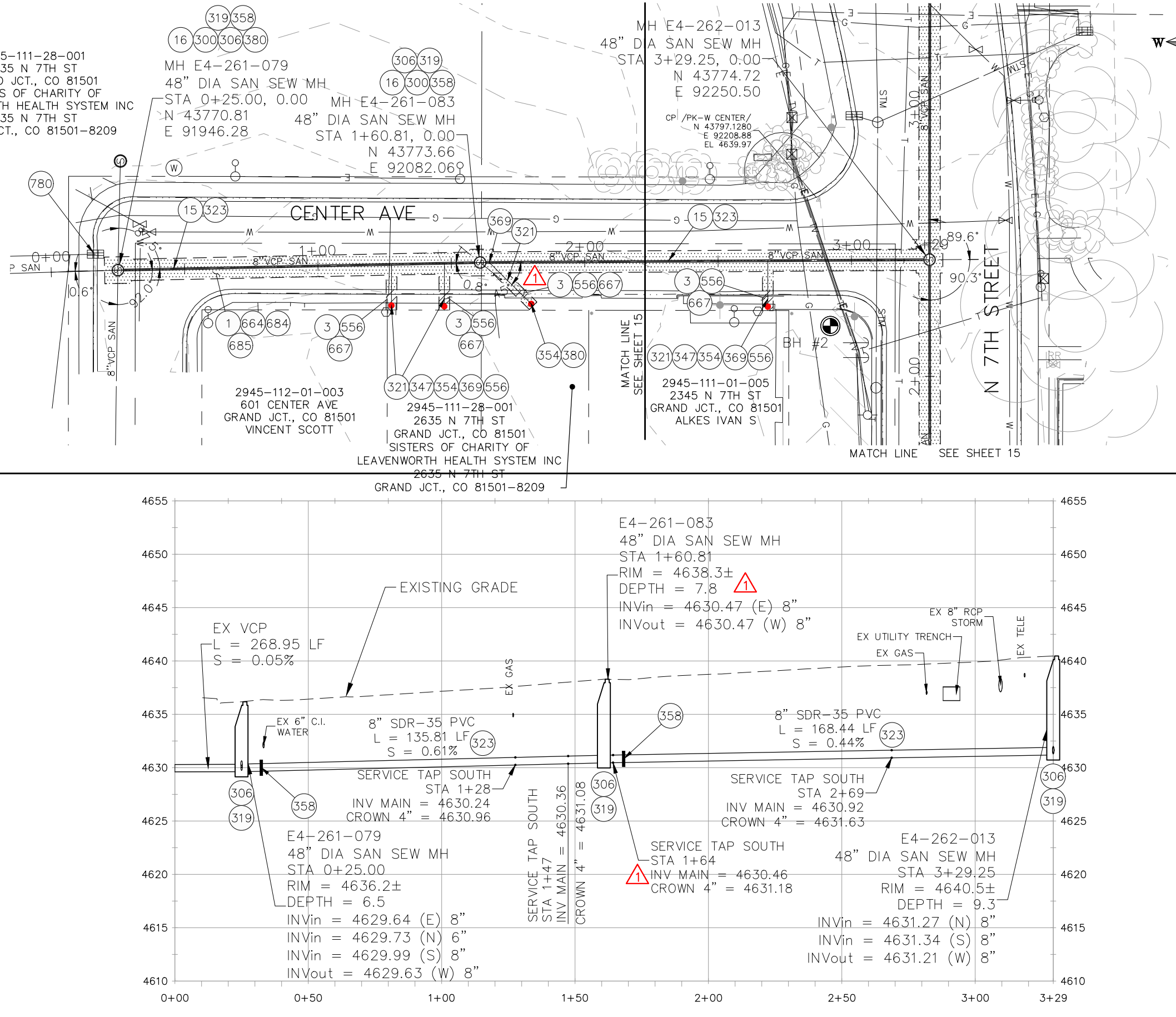
CITY OF Grand Junction COLORADO

PUBLIC WORKS
ENGINEERING DIVISION

2018 SEWER LINE REPLACEMENT – PHASE A
N 7TH STREET PLAN AND PROFILE
STA 3+60 TO STA 5+60

16



PROJECT NO. 902-F001633

CONSTRUCTION NOTES

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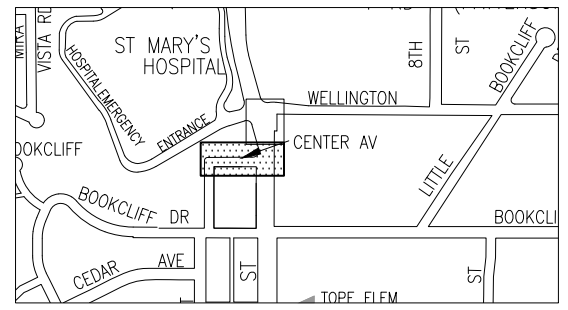
(780) 208 – STORM DRAIN INLET PROTECTION (SILT-SACK) (INCLUDES MAINTENANCE AND REMOVAL OF DIRT AND DEBRIS)



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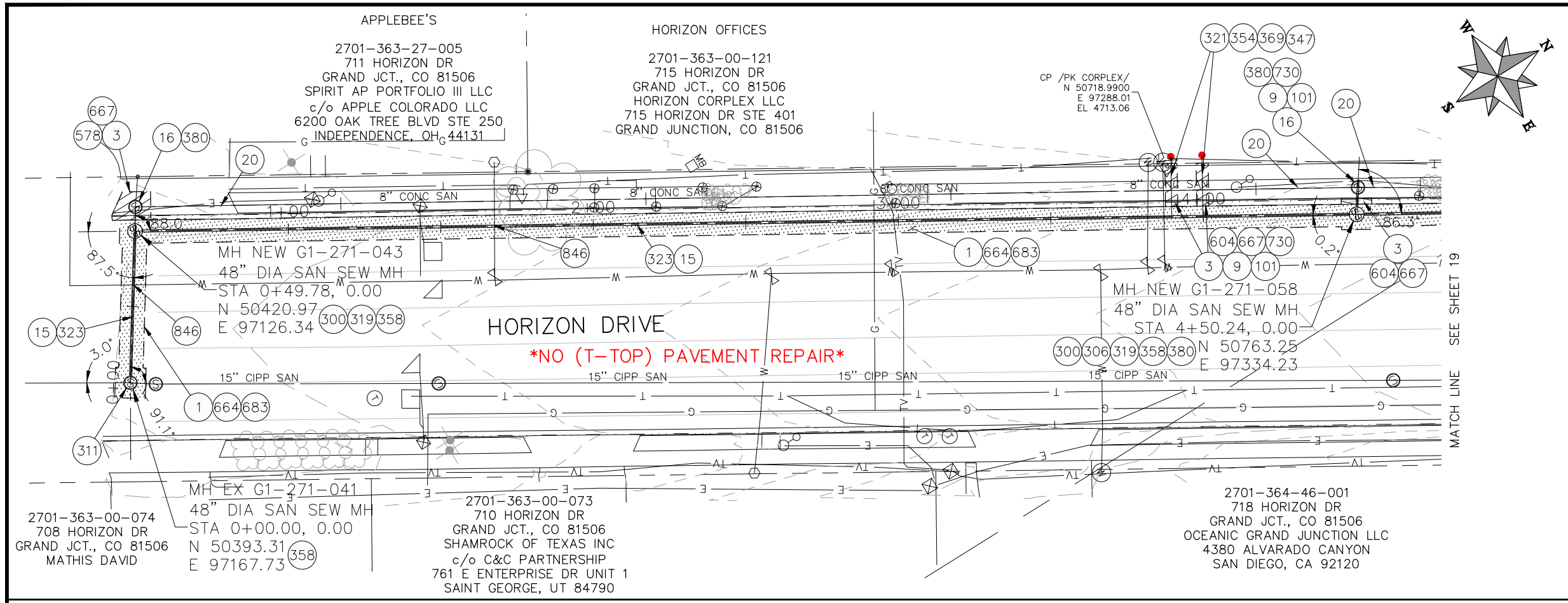
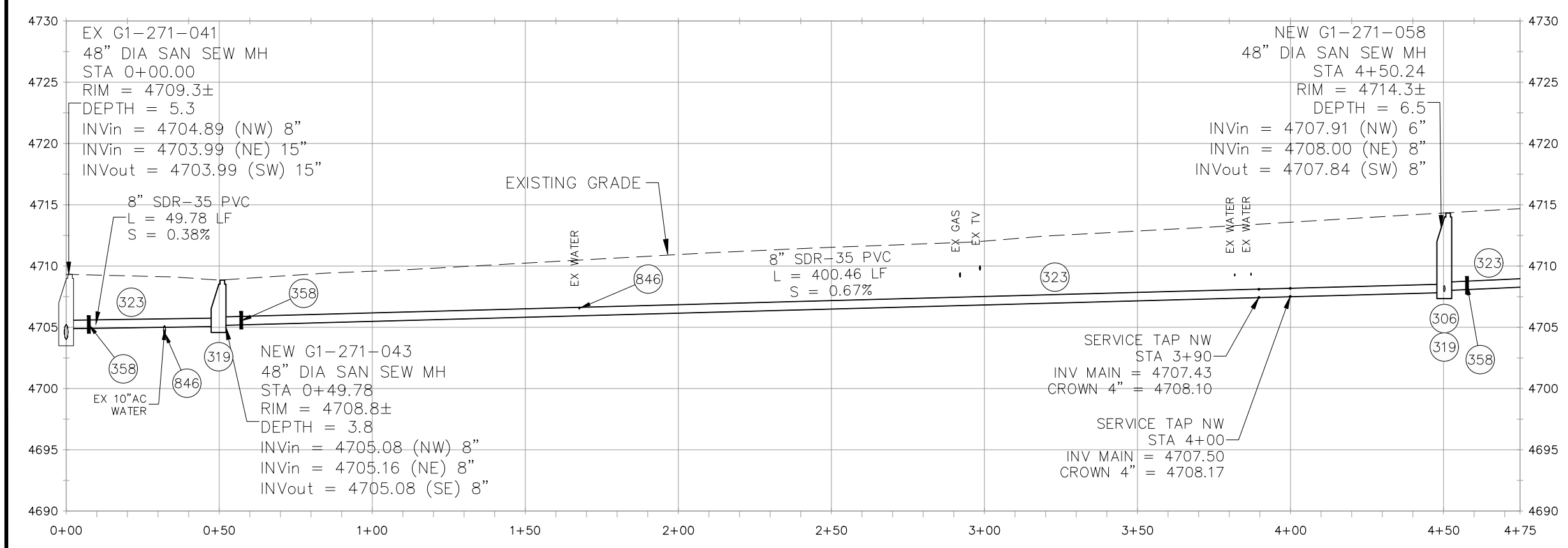
CITY OF Grand Junction COLORADO

PUBLIC WORKS
ENGINEERING DIVISION

2018 SEWER LINE REPLACEMENT – PHASE A
N 7TH ST/CENTER AVE PLAN AND PROFILE
STA 0+00 TO STA 3+30

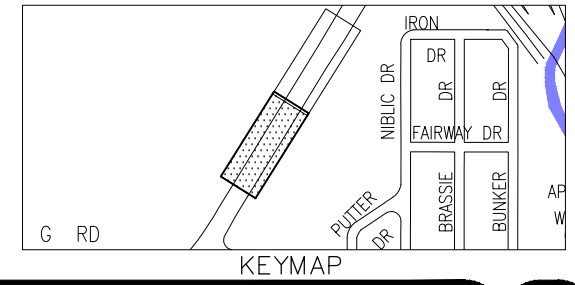




PROJECT NO. 902-F001633

CONSTRUCTION NOTES

1. 202 – REMOVAL OF ASPHALT MAT. CUT AND REMOVE ASPHALT AS SHOWN. (INDICATED BY DOT HATCH PATTERN)
3. 202 – REMOVAL OF CONCRETE. SAW CUT AND REMOVE CONCRETE AS SHOWN. (INDICATED BY CROSS HATCH PATTERN) INCLUDES BUT NOT LIMITED TO CURB, GUTTER, SIDEWALK, DRIVEWAY, SLABS, V-PAN, CURB RAMPS, INTERSECTION CORNERS, APRONS, AND LANDSCAPE BORDERS.
9. 202 – REMOVAL OF SOD
15. 202 – REMOVAL OF PIPE AS SHOWN. (SIZE AND TYPE AS SHOWN ON PLAN)
16. 202 – REMOVAL OF MANHOLE. CONTRACTOR SHALL SALVAGE RING AND COVER AND DELIVER TO CITY SHOPS
20. 202 – ABANDON PIPE. ABANDON BY PLUGGING REMAINING ENDS WITH CONCRETE.
101. 210 – RESET SPRINKLER SYSTEM (COMPLETE IN PLACE)
300. 102.11/108.5 – SANITARY SEWER BASIC MANHOLE (48" I.D.). INCLUDES CONNECTION OF ADJACENT SEWER LINE, FORMING INVERTS AND ADJUSTING TO FINAL GRADE. (SEE CITY OF GRAND JUNCTION STANDARD DETAIL SS-02).
306. 102.11/108.5 – MANHOLE BARREL SECTION (D>5') (48" I.D.).
311. 102.11/108.5 – CONNECT TO EXISTING MANHOLE (SEE CITY OF GRAND JUNCTION STD. DETAIL SS-08)
319. EPOXY COAT MANHOLE INVERT. COST IS INCIDENTAL TO COST OF MANHOLE INSTALLATION.
321. 102.9/108.2 – 4" GRAVITY SEWER PIPE (SDR 35 PVC). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.
323. 102.9/108.2 – 8" GRAVITY SEWER PIPE (SDR 35 PVC). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.
347. 102/103/104 – CONTRACTOR SHALL FIELD VERIFY EXISTING SEWER SERVICE LOCATIONS (SEWER SERVICE LOCATIONS AND CONNECTION POINTS TO EXISTING SERVICES ARE SHOWN FOR ESTIMATING PURPOSES ONLY AND MAY VARY FROM WHAT IS SHOWN).
354. 104.20 – INSTALL 2-WAY SANITARY SEWER SERVICE CLEANOUT (STD. DETAIL SS-07). INCLUDES CLEANOUT RING AND COVER AND CONCRETE COLLAR IN UNPAVED AREAS (SEE STD. DETAIL SS-07).
358. 103 – CLAY CUT-OFF WALL (INCIDENTAL TO SEWER INSTALLATION PAY ITEM)
369. 102.9/108.3 – 8" x 4" SEWER SERVICE TAP. FULL BODY WYE (SEE STD. DETAIL SS-06).
380. CONNECT TO EXISTING SEWER PIPE. THE CONTRACT PRICE FOR SEWER PIPE SHALL INCLUDE THE COST OF CONNECTION TO EXISTING PIPELINE
578. 608.06 – CONCRETE DRIVEWAY SECTION (8" SECTION)
604. 608.06 – CONCRETE CURB AND GUTTER (MATCH IN KIND)
664. 304 – AGGREGATE BASE COURSE (CLASS 6) (15" THICK)
667. 304 – AGGREGATE BASE COURSE (CLASS 6) (6" THICK)
683. 401.08 – HOT BITUMINOUS PAVEMENT (PATCHING) (5" THICK) (GRADING SX, PG 64-22, GYR.=75) (TWO LIFTS)
730. 212 – RESOD AREA AS SHOWN (INCLUDES 4" THICK OF TOPSOIL)
846. POTHOLE EXISTING UTILITY AHEAD OF CONSTRUCTION. COORDINATE ANY NEEDED DESIGN CHANGES WITH PROJECT ENGINEER SO AS TO AVOID UTILITY CONFLICTS.



KEYMAP

DESCRIPTION	DATE
REVISION ⚠ ADDENDUM #1 – REVISED PLANS	04/09/18
REVISION ⚠	
REVISION ⚠	
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DRAWN BY BCH DATE 03/20/18
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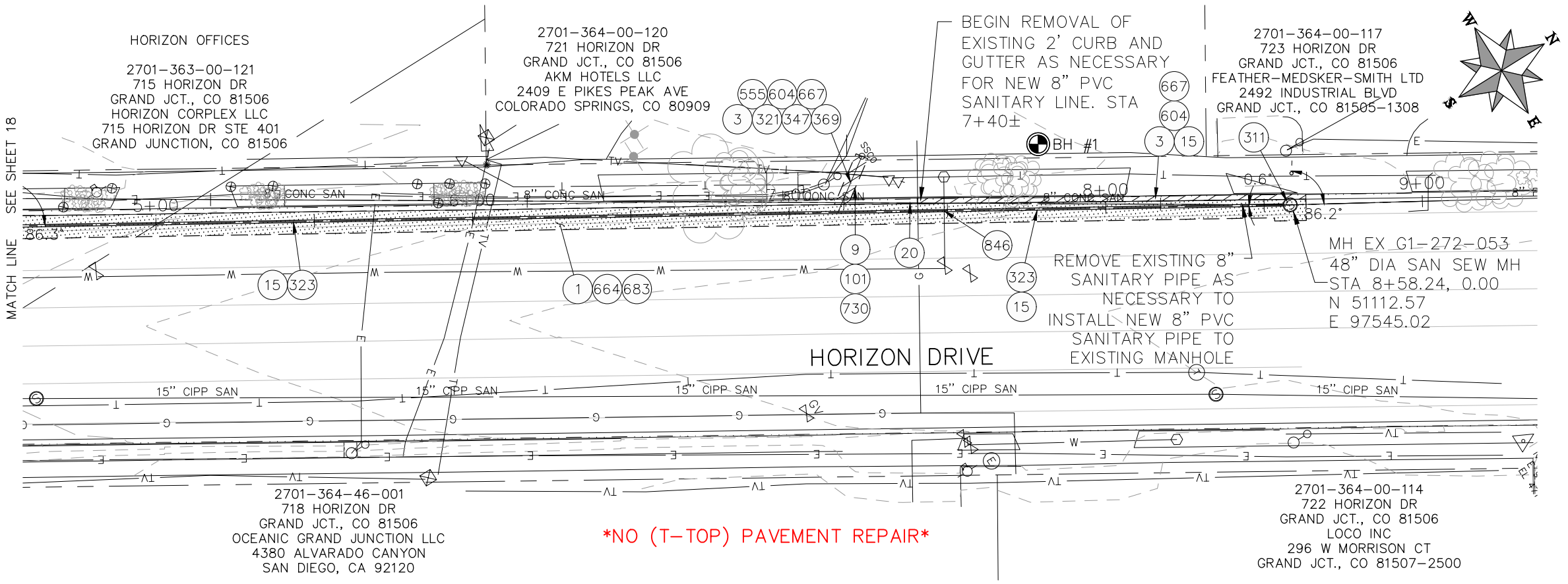
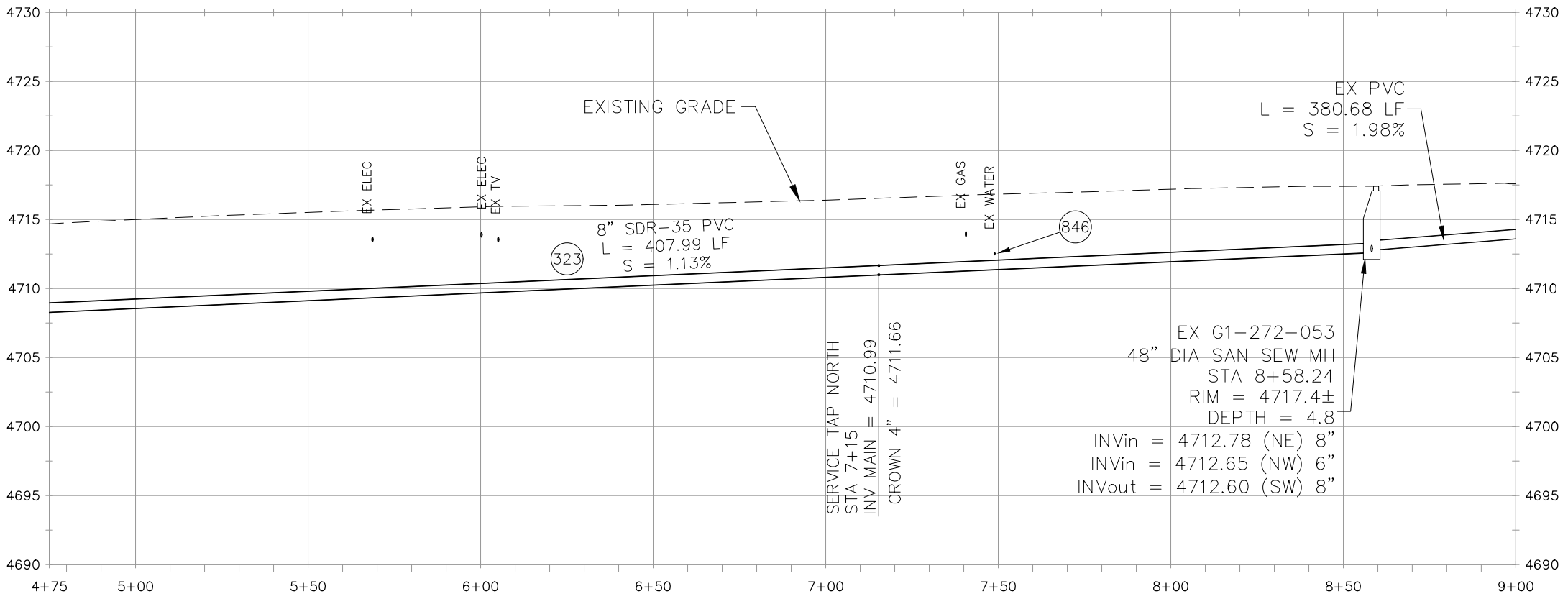
SCALES: PLAN & PROFILE
HORIZONTAL: 1" = 40'
0 10 20 40
VERTICAL: 1" = 10'
0 2.5 5 10

CITY OF Grand Junction COLORADO

PUBLIC WORKS
ENGINEERING DIVISION

2018 SEWER LINE REPLACEMENT – PHASE A
HORIZON DRIVE PLAN AND PROFILE
STA 0+00 TO STA 4+75





PROJECT NO. 902-F001633

CONSTRUCTION NOTES

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9. 202 – REMOVAL OF SOD
15. 202 – REMOVAL OF PIPE AS SHOWN. (SIZE AND TYPE AS SHOWN ON PLAN)
20. 202 – ABANDON PIPE. ABANDON BY PLUGGING REMAINING ENDS WITH CONCRETE.
101. 210 – RESET SPRINKLER SYSTEM (COMPLETE IN PLACE)
311. 102.11/108.5 – CONNECT TO EXISTING MANHOLE (SEE CITY OF GRAND JUNCTION STD. DETAIL SS-08)
321. 102.9/108.2 – 4" GRAVITY SEWER PIPE (SDR 35 PVC). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.
323. 102.9/108.2 – 8" GRAVITY SEWER PIPE (SDR 35 PVC). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.
347. 102/103/104 – CONTRACTOR SHALL FIELD VERIFY EXISTING SEWER SERVICE LOCATIONS (SEWER SERVICE LOCATIONS AND CONNECTION POINTS TO EXISTING SERVICES ARE SHOWN FOR ESTIMATING PURPOSES ONLY AND MAY VARY FROM WHAT IS SHOWN).
354. 104.20 – INSTALL 2-WAY SANITARY SEWER SERVICE CLEANOUT (STD. DETAIL SS-07). INCLUDES CLEANOUT RING AND COVER AND CONCRETE COLLAR IN UNPAVED AREAS (SEE STD. DETAIL SS-07).
369. 102.9/108.3 – 8" x 4" SEWER SERVICE TAP. FULL BODY WYE (SEE STD. DETAIL SS-06).
555. 608.06 – CONCRETE SIDEWALK (4" THICK) (MATCH IN KIND)
604. 608.06 – CONCRETE CURB AND GUTTER (MATCH IN KIND)
664. 304 – AGGREGATE BASE COURSE (CLASS 6) (15" THICK)
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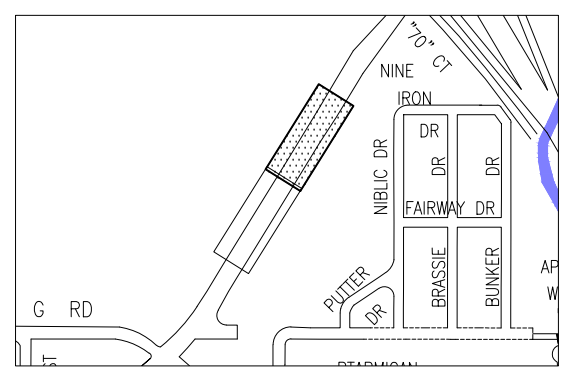

KEYMAP

DESCRIPTION	DATE
REVISION 1 ADDENDUM #1 – REVISED PLANS	04/09/18
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY BCH DATE 03/20/18
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CITY OF Grand Junction COLORADO

PUBLIC WORKS
ENGINEERING DIVISION

2018 SEWER LINE REPLACEMENT – PHASE A
HORIZON DRIVE PLAN AND PROFILE
STA 4+75 TO STA 9+00

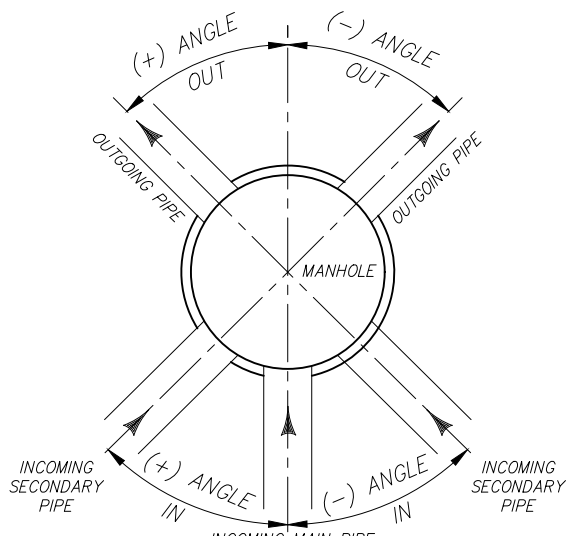
⚠1 S 10TH ST AREA SANITARY MANHOLE SCHEDULE

SANITARY SEWER			
NAME	DETAILS	DEPTH	ANGLE
C3-262-067	STA = 12+20.92 DIA = 48" RIM = 4576.95 INV. OUT = 4571.06 (N), PIPE DIA = 8" FPVC INV. IN = 4571.22 (S), PIPE DIA = 8" PVC	5.89'	0.4° OUT
C3-262-068	STA = 14+06.75 DIA = 48" RIM = 4576.39 INV. OUT = 4571.85 (N), PIPE DIA = 8" PVC INV. IN = 4571.92 (S), PIPE DIA = 6" PVC *(EXISTING)*	4.54'	-0.2° OUT
C4-262-029	STA = 13+79.90 DIA = 48" RIM = 4574.95 INV. OUT = 4568.02 (S), PIPE DIA = 10" PVC INV. IN = 4568.86 (N), PIPE DIA = 8" VCP *(EXISTING)* INV. IN = 4568.12 (E), PIPE DIA = 10" PVC	6.94'	89.4° OUT -0.2° IN
C4-262-030	STA = 12+14.03 DIA = 48" RIM = 4573.31 INV. OUT = 4567.22 (S), PIPE DIA = 10" PVC INV. IN = 4567.51 (W), PIPE DIA = 8" VCP *(EXISTING)* INV. IN = 4567.27 (N), PIPE DIA = 10" PVC	6.09'	0.1° OUT -76.5° IN
C4-262-031	STA = 10+50.20 DIA = 48" RIM = 4572.98 INV. OUT = 4566.67 (W), PIPE DIA = 10" VCP *(EXISTING)* INV. IN = 4566.72 (N), PIPE DIA = 10" PVC INV. IN = 4566.67 (E), PIPE DIA = 8" VCP *(EXISTING)*	6.31'	-89.4° OUT 90.0° IN
C4-262-045	STA = 18+60.65 DIA = 48" RIM = 4576.46 INV. OUT = 4570.28 (W), PIPE DIA = 10" PVC INV. IN = 4570.29 (E), PIPE DIA = 8" FPVC INV. IN = 4570.28 (N), PIPE DIA = 8" VCP *(EXISTING)*	6.18'	0.9° OUT -90.9° IN
C4-262-048	STA = 5+31.03 DIA = 48" RIM = 4575.26 INV. IN = 4568.18 (E), PIPE DIA = 8" FPVC INV. OUT = 4568.18 (W), PIPE DIA = 8" VCP *(EXISTING)*	7.08'	-0.2° OUT
C4-262-063	STA = 23+40.59 DIA = 48" RIM = 4578.34 INV. OUT = 4571.55 (W), PIPE DIA = 8" FPVC INV. IN = 4571.55 (E), PIPE DIA = 8" PVC	6.79'	-0.4° OUT
C4-262-064	STA = 10+11.12 DIA = 48" RIM = 4576.90 INV. OUT = 4570.47 (W), PIPE DIA = 8" FPVC INV. IN = 4570.67 (S), PIPE DIA = 8" FPVC	6.43'	89.9° OUT
C4-262-072	STA = 28+21.15 DIA = 48" RIM = 4577.98 INV. OUT = 4572.92 (W), PIPE DIA = 8" PVC INV. IN = 4572.92 (E), PIPE DIA = 6" PVC *(EXISTING)*	5.06'	0.4° OUT

⚠1

S 7TH STREET SANITARY MANHOLE SCHEDULE

SANITARY SEWER			
NAME	DETAILS	DEPTH	ANGLE
NEW C3-262-017	STA = 0+50 DIA = 48" RIM = 4567.67 INV. IN = 4562.23 (N), PIPE DIA = 8" PVC INV. OUT = 4562.21 (S), PIPE DIA = 10" PVC INV. IN = 4562.27 (E), PIPE DIA = 8" PVC	5.46'	-7.6° OUT 97.0° IN
NEW MH 2	STA = 1+00.39 DIA = 48" RIM = 4567.23 INV. OUT = 4562.39 (S), PIPE DIA = 8" PVC INV. IN = 4562.49 (N), PIPE DIA = 8" PVC	4.84'	7.1° OUT
NEW MH 3	STA = 3+78.74 DIA = 48" RIM = 4567.69 INV. OUT = 4562.93 (S), PIPE DIA = 8" PVC INV. IN = 4562.94 (N), PIPE DIA = 8" PVC INV. IN = 4562.94 (E), PIPE DIA = 8" PVC *(EXISTING)*	4.76'	0.0° OUT 90.0° IN
NEW MH 4	STA = 5+39.32 DIA = 48" RIM = 4568.24 INV. OUT = 4563.32 (S), PIPE DIA = 8" PVC INV. IN = 4563.42 (N), PIPE DIA = 8" PVC	4.98'	-1.2° OUT
NEW MH 5	STA = 7+08.98 DIA = 48" RIM = 4569.00 INV. OUT = 4563.76 (S), PIPE DIA = 8" PVC INV. IN = 4563.86 (E), PIPE DIA = 8" PVC	5.24'	91.0° OUT
NEW MH 6	STA = 11+53.06 DIA = 48" RIM = 4570.35 INV. OUT = 4564.74 (W), PIPE DIA = 8" PVC INV. IN = 4564.76 (E), PIPE DIA = 8" PVC	5.62'	0.8° OUT
NEW MH 7	STA = 13+07.53 DIA = 48" RIM = 4571.28 INV. OUT = 4565.07 (W), PIPE DIA = 8" PVC	6.20'	OUT ONLY



MANHOLE PIPE ANGLE DETAIL

DESCRIPTION	DATE
REVISION ⚠ ADDENDUM #1 - REVISED PLANS	04/09/18
REVISION ⚠	
REVISION ⚠	
REVISION ⚠	

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SCALES: PLAN & PROFILE
HORIZONTAL: 1" = NA
0 NA NA NA
VERTICAL: 1" = NA
0 NA NA NA

CITY OF Grand Junction COLORADO

PUBLIC WORKS
ENGINEERING DIVISION

2018 SEWER LINE REPLACEMENT - PHASE A
SEWER MANHOLE STRUCTURE SCHEDULE 1

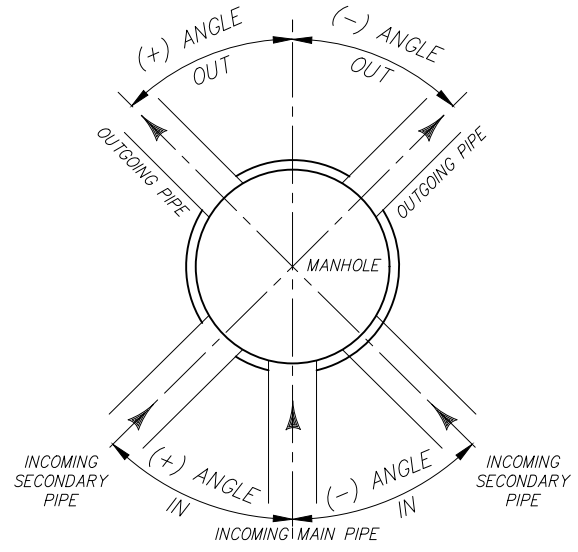
⚠1 N 7TH ST SANITARY MANHOLE SCHEDULE

SANITARY SEWER			
NAME	DETAILS	DEPTH	ANGLE
E4-261-079	STA = 0+25 DIA = 48" RIM = 4636.17 INV. IN = 4629.64 (E), PIPE DIA = 8" PVC INV. OUT = 4629.63 (W), PIPE DIA = 8" VCP *(EXISTING)* INV. IN = 4629.73 (N), PIPE DIA = 6" RCP *(EXISTING)* INV. IN = 4629.99 (S), PIPE DIA = 8" VCP *(EXISTING)*	6.54'	0.6° OUT -87.5° IN 92.0° IN
E4-261-083	STA = 1+60.81 DIA = 48" RIM = 4638.29 INV. IN = 4630.47 (E), PIPE DIA = 8" PVC INV. OUT = 4630.47 (W), PIPE DIA = 8" PVC	7.82'	0.8° OUT
E4-262-013	STA = 2+43.71 DIA = 48" RIM = 4640.46 INV. IN = 4631.27 (N), PIPE DIA = 8" PVC INV. OUT = 4631.21 (W), PIPE DIA = 8" PVC INV. IN = 4631.34 (S), PIPE DIA = 8" PVC	9.25'	-89.6° IN 90.3° IN
E4-262-014	STA = 1+40.43 DIA = 48" RIM = 4639.37 INV. IN = 4631.62 (S), PIPE DIA = 8" PVC INV. OUT = 4631.48 (N), PIPE DIA = 8" PVC INV. IN = 4631.62 (E), PIPE DIA = 8" VCP *(EXISTING)*	7.89'	0.6° OUT -91.4° IN
E4-262-017	STA = 0+25 DIA = 48" RIM = 4638.37 INV. OUT = 4631.93 (N), PIPE DIA = 8" PVC INV. IN = 4631.98 (S), PIPE DIA = 8" VCP *(EXISTING STUB)*	6.44'	-1.0° OUT
NEW E4-262-012	STA = 5+00 DIA = 48" RIM = 4644.66 INV. IN = 4632.05 (N), PIPE DIA = 8" VCP INV. OUT = 4632.03 (S), PIPE DIA = 8" PVC	12.63'	OUT ONLY

⚠1

HORIZON DRIVE SANITARY MANHOLE SCHEDULE

SANITARY SEWER			
NAME	DETAILS	DEPTH	ANGLE
EX G1-271-041	STA = 0+00 DIA = 48" RIM = 4709.32 INV. IN = 4704.89 (NW), PIPE DIA = 8" PVC INV. OUT = 4703.99 (SW), PIPE DIA = 15" CIPP *(EXISTING)* INV. IN = 4703.99 (NE), PIPE DIA = 15" CIPP *(EXISTING)*	5.33'	-91.1° IN 3.0° OUT
EX G1-272-053	STA = 8+58.24 DIA = 48" RIM = 4717.41 INV. IN = 4712.78 (NE), PIPE DIA = 8" PVC *(EXISTING)* INV. IN = 4712.65 (NW), PIPE DIA = 6" PVC *(EXISTING)* INV. OUT = 4712.60 (SW), PIPE DIA = 8" PVC	4.81'	-86.2° IN -0.6° OUT
NEW G1-271-043	STA = 0+49.78 DIA = 48" RIM = 4708.85 INV. OUT = 4705.08 (SE), PIPE DIA = 8" PVC INV. IN = 4705.08 (NW), PIPE DIA = 8" RCP *(EXISTING)* INV. IN = 4705.16 (NE), PIPE DIA = 8" PVC	3.77'	87.5° OUT -88.0° IN
NEW G1-271-058	STA = 4+50.24 DIA = 48" RIM = 4714.33 INV. IN = 4707.91 (NW), PIPE DIA = 6" PVC *(EXISTING)* INV. OUT = 4707.84 (SW), PIPE DIA = 8" PVC INV. IN = 4708.00 (NE), PIPE DIA = 8" PVC	6.49'	-86.3° IN -0.2° OUT



MANHOLE PIPE ANGLE DETAIL

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0 NA NA NA
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CITY OF Grand Junction COLORADO

PUBLIC WORKS
ENGINEERING DIVISION

2018 SEWER LINE REPLACEMENT - PHASE A
SEWER MANHOLE STRUCTURE SCHEDULE 2

BOREHOLE LOG KEY

BOREHOLE LOCATION:

DRILLING COMPANY: DRILL RIG:

SAMPLER DRILL STEM:

DEPTH (ft) WATER LEVEL	GRAPHIC	SAMPLE	SAMPLE #	FIELD BLOW COUNTS	FIELD "N" VALUE (BPF)	SPT "N" VALUE (BPF)	SUBSURFACE DESCRIPTION	FIELD & LABORATORY TEST RESULTS
5		CA					drive sample, California sampler	Notes in this column indicate tests performed and test results:
		ST					drive sample, standard sampler	DD: dry density, pcf MC: moisture content, %
							core sample	LL: liquid limit PL: plastic limit
							bulk sample, obtained from augers	PI: plasticity index GF: gravel fraction, %
10			DS1				Sample identifier: DS = Drive sample BS = Bulk sample from augers CS = Core sample GS = Grab sample	SF: sand fraction, % Fines: silt/clay, % Sh: Shear resistance P: Penetration resistance CBR: California Bearing Ratio SP: swelling pressure TM: total movement UCS: unconfined compressive strength psf: pounds per square foot pcf: pounds per cubic foot psi: pounds per square inch
15				9,12,14			Blows required to drive sampler 6" three times; first 6" is considered to be the "seating" drive	
					26		Indicates 26 blows required to drive the sampler 12 inches	
						18	Indicates blows/foot (BPF) using a 140-lb hammer falling 30" free water depth at time of drilling	
20							TOPSOIL	
							CLAY	
25							SILT	
							SAND	
30							GRAVEL	
							SHALE	
35							SAND STONE HARD BEDROCK	
40								
45								

Unified Soil Classification System (ASTM D-2487)
CL = lean clay to sandy/gravelly lean clay
ML = silt to sandy/gravelly silt
CH = high plasticity clay to sandy/gravelly high plasticity clay
MH = high elasticity silt to sandy/gravelly high elasticity silt
SW = well-graded sand or well-graded sand with gravel
SP = poorly graded sand or poorly graded sand with gravel
SM = silty sand to silty sand with gravel
SC = clayey sand to clayey sand with gravel
GW = well-graded gravel or well-gravel with sand
GP = poorly graded gravel or poorly graded gravel with sand
GM = silty gravel or silty gravel with sand
GC = clayey gravel or clayey gravel with sand

N value	Relative density
sands (non-cohesive soils)	
0-4	very loose
4-10	loose
10-30	medium
30-50	dense
>50	very dense
clays (cohesive soils)	
<2	very soft
2-4	soft
4-8	medium
8-15	stiff
15-30	very stiff
>30	hard

Rock Weathering Classification
W1 = Fresh
W2 = Slightly weathered
W3 = Moderately weathered
W4 = Highly weathered
W5 = Completely weathered
W6 = Residual soil, no structure
RQD = Rock Quality Designation

Intact Rock Strength Classification
R0 = Extremely weak rock, 35-150 psi
R1 = Very weak rock, 150-725 psi
R2 = Weak rock, 725-3,625 psi
R3 = Medium strong rock, 3,625-7,250 psi
R4 = Strong rock, 7,250-14,500 psi
R5 = Very strong rock, 14,500-36,000 psi
R6 = Extremely strong rock, >36,000 psi

Borehole Log		
	Field Staff	
	Drafting Staff	
	Field Date	Borehole Log Key
of	Project #	

DOWL
222 South Park Avenue
Montrose, Colorado 81401
970-249-6828

Log of Borehole #1 (BH#1)

BOREHOLE LOCATION: Horizon Drive at Rodeway Inn by Shell Station (in grassy area by sidewalk)

DRILLING COMPANY: HRL / Chancy DRILL RIG: CME 55

SAMPLER: Standard SSS DRILL STEM: 4" SSA

DEPTH (ft) WATER LEVEL	GRAPHIC	SAMPLE	SAMPLE #	FIELD BLOW COUNTS	FIELD "N" VALUE (BPF)	SPT "N" VALUE (BPF)	SUBSURFACE DESCRIPTION	FIELD & LABORATORY TEST RESULTS
5		STD	DS1	4, 4, 3	7	7	reddish-brown, dry, firm to stiff, silty/sandy CLAY (0-6.5')	DS1 @3-4.5' (CL) MC=13.9%
		STD	DS2	13, 13, 16	29	29	harder drilling at 5' (possibly weathered shale)	DS2 @6-7.5' (CL) LL=41 PL=21 PI=20 gravel=0.1% sand=19.7% silt=35.5% clay=44.7% MC=13.9%
10		STD	DS3	23, 28, 50	78	78		DS3 @9-10.5' (CL) water soluble sulfates=0.70% chlorides=0.021% Electro-conductivity=320 µS/cm pH=6.9 MC=12.8%
		STD	DS4	16, 24, 29	53	53	dry, v. stiff to hard, gray, weathered Mancos SHALE, salts (6.5-16.5')	DS4 @12-13.5' (CL) MC=11.9%
15		STD	DS5	24, 28, 30	54	54		DS5 @15-16.5' (CL) MC=10.9%
20							shale bedrock at 6.5' end of hole at 16.5' no groundwater encountered	
25								

Borehole Log			
	Field Staff	LB/JLH	
	Drafting Staff	SJ	2018 Sewer Line Replacement Phase A Grand Junction, Colorado
1	Field Date	1/29/2018	
of 7	Project #	7122.74831.01	

DOWL
222 South Park Avenue
Montrose, Colorado 81401
970-249-6828

Log of Borehole #2 (BH#2)

BOREHOLE LOCATION: southwest corner of N. 7th & Center Ave.

DRILLING COMPANY: HRL / Chancy DRILL RIG: CME 55

SAMPLER: Standard SSS DRILL STEM: 4" SSA

DEPTH (ft) WATER LEVEL	GRAPHIC	SAMPLE	SAMPLE #	FIELD BLOW COUNTS	FIELD "N" VALUE (BPF)	SPT "N" VALUE (BPF)	SUBSURFACE DESCRIPTION	FIELD & LABORATORY TEST RESULTS
							~3" asphalt ~6" road base	
2							reddish brown CLAY, some gravel, possible fill above 2' (0.75-2')	
4		STD	DS6	push/1	<1	<1	brown, soft to very soft, moist to very damp, CLAY (2-6') wet seam @4' (~2" thick)	DS6 @3-4.5' (CL) MC=22.4%
6		STD	DS7	2, 2, 2	4	4		DS7 @6-7.5' (SC) water soluble sulfates=0.03% chlorides=0.001% Electro-conductivity=50µS/cm pH=7.4 MC=13.6%
8								
10		STD	DS8	2, 2, 3	5	5	brown, soft, moist, soft to firm, sandy/clayey SILT (6-12.25')	DS8 @9-10.5' (SM/CL) LL=24 PL=16 PI=8 gravel=0.0% sand=15.2% silt=54.0% clay=30.8% MC=18.2%
12		STD	DS9	2, 1, 3	4	4	brown, very soft, very moist, brown CLAY with silt (12.25-13.5')	DS9 @12-13.5' (CL) MC=18.6%
14							end of hole @13.5' no groundwater or bedrock encountered	

Borehole Log			
	Field Staff	LB/JLH	
	Drafting Staff	SJ	2018 Sewer Line Replacement Phase A Grand Junction, Colorado
2	Field Date	1/29/2018	
of 7	Project #	7122.74831.01	

DOWL
222 South Park Avenue
Montrose, Colorado 81401
970-249-6828

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY BCH DATE 03/20/18
DESIGNED BY BCH DATE 03/20/18
CHECKED BY ALC DATE
APPROVED BY ALC DATE

SCALES: PLAN & PROFILE
HORIZONTAL: 1" = NA
VERTICAL: 1" = NA

CITY OF Grand Junction COLORADO

PUBLIC WORKS
ENGINEERING DIVISION

2018 SEWER LINE REPLACEMENT – PHASE A
SOIL BORING LOG DETAIL 1

Log of Borehole #3 (BH#3)

BOREHOLE LOCATION: alley behind Munro Pump

DRILLING COMPANY: HRL / Chancy — DRILL RIG: CME 55

SAMPLER: Standard SSS — DRILL STEM: 4" SSA

DEPTH (ft)	WATER LEVEL	GRAPHIC	SAMPLE	SAMPLE #	FIELD BLOW COUNTS	FIELD "N" VALUE (BPF)	SPT "N" VALUE (BPF)	SUBSURFACE DESCRIPTION	FIELD & LABORATORY TEST RESULTS
0								parking lot GRAVEL (0-8")	
2									
4			STD	DS13	3, 5, 6	11	11	dark brown, stiff, damp, fat CLAY with silt (8"-6.5')	DS13 @3-4.5' (CH) LL=52 PL=19 PI=33 gravel=0.0% sand=1.4% silt=18.6% clay=80.0% MC=20.9%
6	▽		STD	DS14	push/1	<1	<1	groundwater @6.5'	DS14 @6-7.5' (CL) MC=14.5%
8								brown, wet, very soft to soft, fine, silty SAND (6.5-9')	
10			STD	DS15	8, 12, 28	40	40	gray, wet, dense, sandy GRAVEL (9-10.5')	DS15 @9-10.5' (GC) MC=13.2%
12								end of hole at 10.5'; groundwater @6.5' no bedrock encountered	
14									

Borehole Log	Field Staff	LB/JLH	2018 Sewer Line Replacement Phase A Grand Junction, Colorado
3	Drafting Staff	SJ	
of 7	Field Date	1/29/2018	
	Project #	7122.74831.01	

DOWL
222 South Park Avenue
Montrose, Colorado 81401
970-249-6828

Log of Borehole #4 (BH#4)

BOREHOLE LOCATION: alley behind 1101 3rd Ave.

DRILLING COMPANY: HRL / Chancy — DRILL RIG: CME 55

SAMPLER: Standard SSS — DRILL STEM: 4" SSA

DEPTH (ft)	WATER LEVEL	GRAPHIC	SAMPLE	SAMPLE #	FIELD BLOW COUNTS	FIELD "N" VALUE (BPF)	SPT "N" VALUE (BPF)	SUBSURFACE DESCRIPTION	FIELD & LABORATORY TEST RESULTS
0								gravelly roadbase FILL (0-0.5')	
2								dark brown, moist, soft to firm CLAY (0.5' - 5')	DS16 @3-4.5' (CL) LL=45 PL=18 PI=27 gravel=0.0% sand=1.7% silt=23.9% clay=74.4% MC=20.2% water soluble sulfates=0.69% chlorides=0.024% Electro-conductivity=412 µS/cm pH=7.7
4			STD	DS16	2, 3, 4	7	7		
6	▽							groundwater @5'	
			STD	DS17	push/1	1	1	brown, wet, very soft, silty fine SAND with occasional gravel and some clay (5-8.5')	DS17 @6-7.5.5' (SM) MC=28.4%
8									
10			STD	DS18	6, 14, 14	28	28	wet, moderately dense, sandy GRAVEL (8.5-10.5')	DS18 @9-10.5' (SC) MC=13.5%
12								end of hole at 10.5'; groundwater @5' no bedrock encountered	
14									

Borehole Log	Field Staff	LB/JLH	2018 Sewer Line Replacement Phase A Grand Junction, Colorado
4	Drafting Staff	SJ	
of 7	Field Date	1/29/2018	
	Project #	7122.74831.01	

DOWL
222 South Park Avenue
Montrose, Colorado 81401
970-249-6828

Log of Borehole #6 (BH#6)

BOREHOLE LOCATION: South side of alley behind Orkin

DRILLING COMPANY: HRL / Chancy — DRILL RIG: CME 55

SAMPLER: Standard SSS — DRILL STEM: 4" SSA

DEPTH (ft)	WATER LEVEL	GRAPHIC	SAMPLE	SAMPLE #	FIELD BLOW COUNTS	FIELD "N" VALUE (BPF)	SPT "N" VALUE (BPF)	SUBSURFACE DESCRIPTION	FIELD & LABORATORY TEST RESULTS
0								damp, dense, GRAVEL and sandy roadbase FILL (0-2')	
2									
4			STD	DS10	push /4	4	4	brown, moist to wet, v. soft to soft, silty CLAY; mottled with charcoal flecks, some is possible FILL (2-8') petroleum smell in last 4" of sampler	DS10 @3-4.5' (CL) MC=31.7% (organics)
6	▽		STD	DS11	push / 2 / 2	4	4	groundwater encountered at 6.5'; very soft	DS11 @6-7.5' (no recovery)
8								caving at 8'	
10			STD	DS12	3, 2, 3	5	5	brown, wet, soft to firm, silty fine SAND, trace gravels (8-10.5')	DS12 @9-10.5' (SM) LL=NP PL=NP PI=NP gravel=0.0% sand=66.6% silt=22.6% clay=10.8% MC=34.0%
12								end of hole at 10.5'; groundwater @6.5' no bedrock encountered	
14									

Borehole Log	Field Staff	LB/JLH	2018 Sewer Line Replacement Phase A Grand Junction, Colorado
6	Drafting Staff	SJ	
of 7	Field Date	1/29/2018	
	Project #	7122.74831.01	

DOWL
222 South Park Avenue
Montrose, Colorado 81401
970-249-6828

PROJECT NO. 902-F001633

GENERAL NOTES

A. CONTRACTOR SHALL HAVE ONE SIGNED COPY OF PLANS AND A COPY OF THE CITY OF GRAND JUNCTION'S STANDARD SPECIFICATIONS AT THE JOB SITE AT ALL TIMES.

B. ALL SEWER MAINS SHALL BE PVC SDR 35 (ASTM 3034) UNLESS OTHERWISE NOTED.

C. ALL SEWER MAINS SHALL BE LAID TO GRADE UTILIZING A PIPE LASER.

D. ALL SERVICE LINE CONNECTIONS TO NEW MAINS SHALL BE ACCOMPLISHED WITH FULL BODY WYES OR TEES. TAPPING SADDLES WILL NOT BE ALLOWED.

E. SERVICE LINE CONNECTIONS TO EXISTING NON-PVC MAINS SHALL BE ACCOMPLISHED USING "INSERTA TEES" MANUFACTURED BY FOWLER MANUFACTURING COMPANY OF HILLSBORO, OREGON. FOR EXISTING PVC MAINS, TAPPING SADDLES SHALL BE USED.

F. 4-INCH SERVICES SHALL NOT BE CONNECTED DIRECTLY INTO MANHOLES. ALL 6 INCH SERVICES SHALL BE CONNECTED TO THE MAIN AT A MANHOLE.

G. THE CONTRACTOR SHALL NOTIFY THE CITY INSPECTOR 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION.

H. THE CONTRACTOR IS RESPONSIBLE FOR ALL REQUIRED SEWER LINE TESTING TO BE COMPLETED IN THE PRESENCE OF THE ENGINEER OR HIS REPRESENTATIVE. PRESSURE TESTING WILL BE PERFORMED AFTER INSTALLATION OF DRY UTILITIES, AFTER ALL COMPACTION OF STREET SUBGRADE AND PRIOR TO STREET PAVING. FINAL LAMPING WILL ALSO BE ACCOMPLISHED AFTER PAVING IS COMPLETED. THESE TESTS SHALL BE THE MINIMUM BASIS OF ACCEPTANCE OF THE SEWER LINE EXTENSION.

I. THE CONTRACTOR SHALL OBTAIN CITY OF GRAND JUNCTION STREET CUT PERMIT FOR ALL WORK WITHIN EXISTING CITY RIGHT-OF-WAY PRIOR TO CONSTRUCTION.

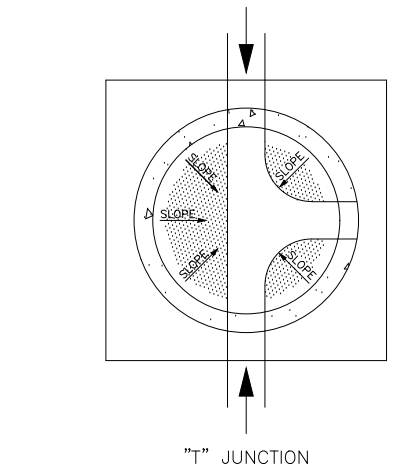
J. A CLAY CUT-OFF WALL SHALL BE PLACED 10 FEET UPSTREAM FROM ALL NEW MANHOLES UNLESS OTHERWISE NOTED. THE CUT-OFF WALL SHALL EXTEND FROM 6 INCHES BELOW TO 6 INCHES ABOVE GRANULAR BACKFILL MATERIAL AND SHALL BE 2 FEET WIDE. IF NATIVE MATERIAL IS NOT SUITABLE, THE CONTRACTOR SHALL IMPORT MATERIAL APPROVED BY THE ENGINEER.

K. SEWER SERVICE STUB OUTS SHALL BE CAPPED AND PLUGGED. STUB OUT SHALL BE MARKED WITH A 4X4 INCH POST PAINTED GREEN BURIED WITH 3 FEET ABOVE GRADE. AS-BUILT SURVEYING FOR VERTICAL GRADE OF STUB OUT REQUIRED PRIOR TO BACKFILL.

L. RED LINE AS-BUILTS SHALL BE SUBMITTED TO THE CITY UTILITY ENGINEER AT LEAST 72 HOURS PRIOR TO PAVING FOR REVIEW.

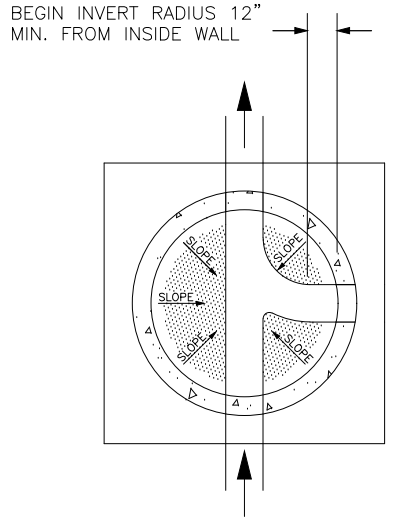
MANHOLE NOTES

1. ALL PROPOSED MANHOLES SHALL BE PRE-CAST CONCRETE.
2. CONCRETE SHALL BE COLORADO DEPARTMENT OF TRANSPORTATION CLASS "B" (SECTION 601.02).
3. ALL CEMENT USED IN MORTAR, CONCRETE BASES, GRADE RINGS, RISER SECTIONS AND CONES FOR SANITARY SEWER MANHOLES, SHALL BE TYPE V OR MODIFIED TYPE II PORTLAND CEMENT WITH LESS THAN 5% TRICALCIUM ALUMINATE.
4. MANHOLE RISER SECTIONS, CONES AND GRADE RINGS SHALL BE PRECAST REINFORCED CONCRETE CONFORMING TO ASTM C-478 OR AASHTO M-199.
5. BACKFILL AROUND MAHHOLES AND OTHER PIPELINE STRUCTURES SHALL BE PLACED IN 8" MAX. LIFTS AND COMPACTED TO 95% AASHTO T-99 WITH HAND OPERATED MECHANICAL EQUIPMENT.
6. ALL WORK SHALL BE IN ACCORDANCE WITH APPROVED PLANS AND CITY SPECIFICATION.
7. THE MANHOLE CONE AND BARREL SECTIONS SHALL BE POSITIONED SUCH THAT THE MANHOLE RING AND STEPS ARE AT A 45° ANGLE FROM THE INLET PIPE (SEE SHEET D4).
8. MANHOLE RING AND COVER SHALL BE SET TO FINISH GRADE USING NON-SHRINK GROUT TO ADJUST RIM ELEVATION. GROUT SHALL NOT EXCEED 2". THICKNESS. GROUT SHALL BE PLACED BETWEEN TOP OF CONCRETE GRADE RING AND RING AND COVER. STEEL GRADE ADJUSTMENT RINGS MAY BE USED FOR ADJUSTMENT OF MANHOLE COVERS ONLY WHEN STREETS ARE OVERLAID.
9. INVERTED MANHOLE RINGS WILL NOT BE ALLOWED UNLESS APPROVED BY THE ENGINEER.
10. WHERE REQUIRED, EPOXY SHALL BE APPLIED AT THE FACTORY.



"T" JUNCTION

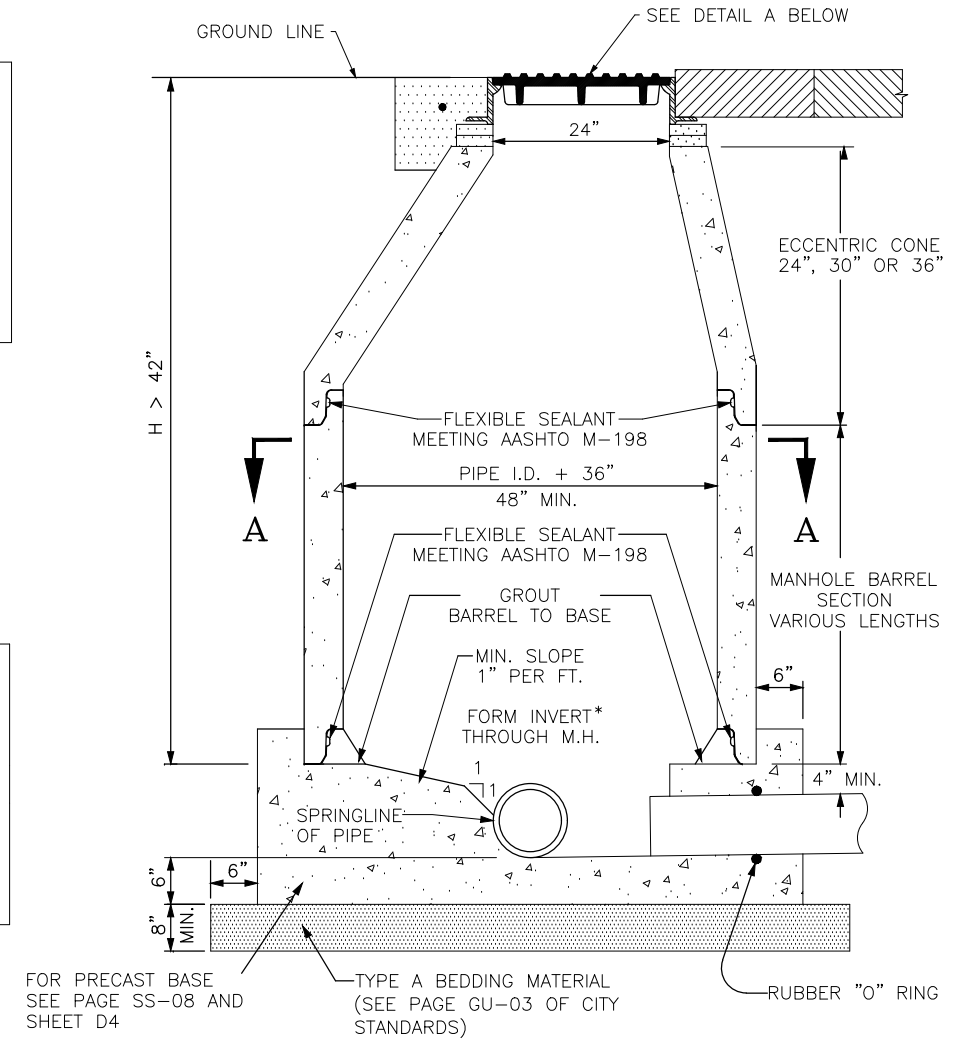
BEGIN INVERT RADIUS 12" MIN. FROM INSIDE WALL



"Y" JUNCTION

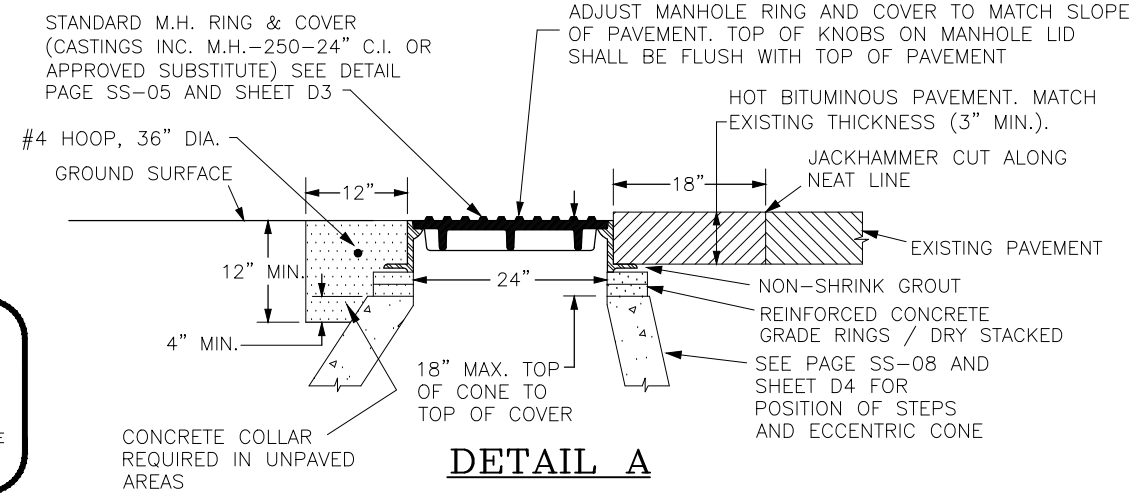
INVERTS SHALL BE FORMED TO PROVIDE A 12" MIN. APPROACH IN LINE WITH EACH PIPE FOR MAINTENANCE EQUIPMENT.

ALL PRECAST MANHOLE SECTIONS SHALL CONFORM TO ASTM C-478 OR AASHTO M-199



* FOR IN LINE MANHOLES THE PIPE MAY BE INSTALLED THROUGH THE MANHOLE BASE AND THE TOP HALF REMOVED.

SECTION A-A



DETAIL A

CALL UTILITY NOTIFICATION CENTER OF COLORADO

811

CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

GENERAL SEWER NOTES

CITY STANDARD SANITARY SEWER DETAIL - PAGE SS-01

STANDARD MANHOLE - CAST IN PLACE BASE

CITY STANDARD SANITARY SEWER DETAIL - PAGE SS-02

DESCRIPTION	DATE
REVISION △	
REVISION △	
REVISION △	
REVISION △	

DRAWN BY BCH DATE 03/20/18
DESIGNED BY BCH DATE 03/20/18
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SCALES: PLAN & PROFILE
HORIZONTAL: 1" = NA
NA NA NA NA
VERTICAL: 1" = NA
NA NA NA NA

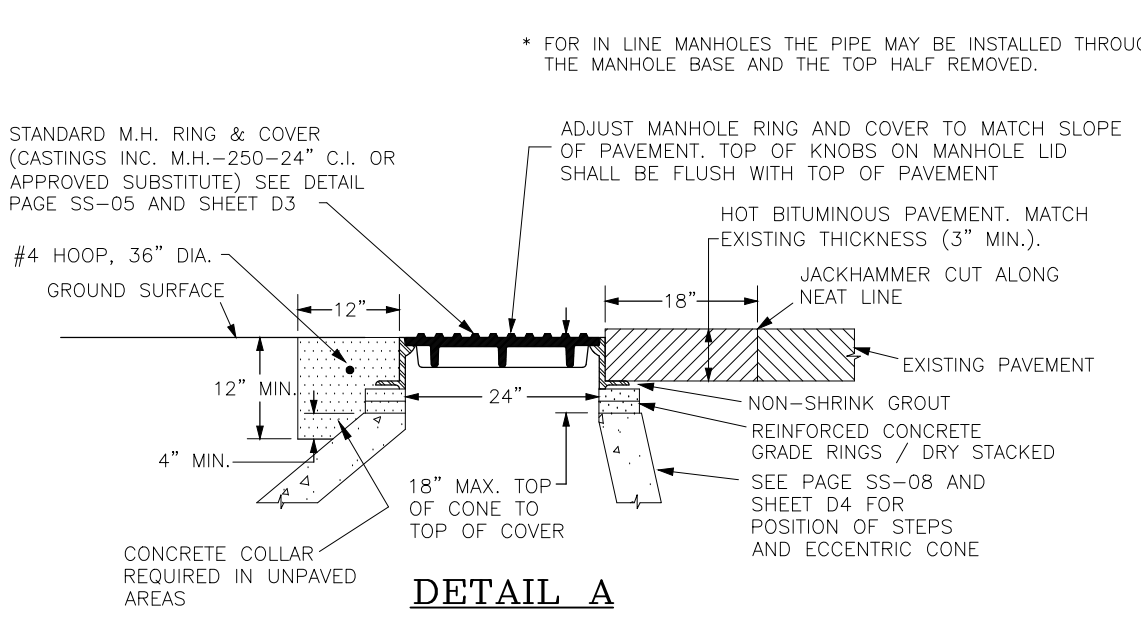
CITY OF Grand Junction COLORADO

PUBLIC WORKS
ENGINEERING DIVISION

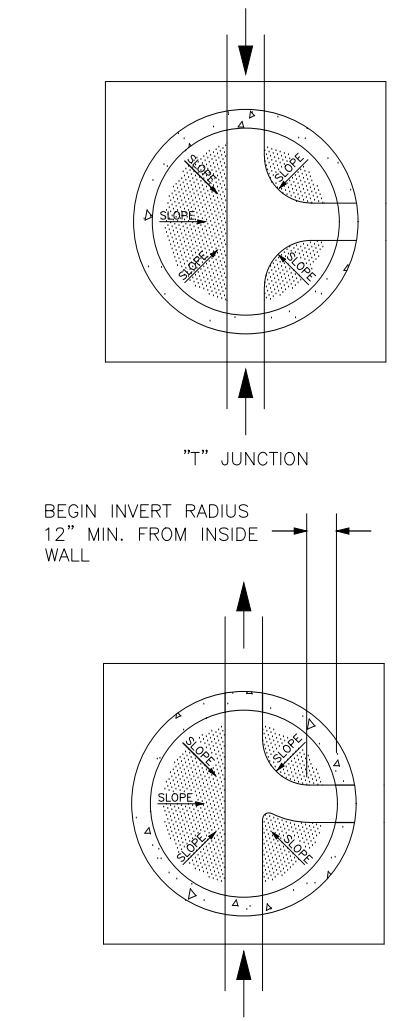
2018 SEWER LINE REPLACEMENTS - PHASE A
GENERAL SEWER NOTES AND
STANDARD MANHOLE

D1

* FOR IN LINE MANHOLES THE PIPE MAY BE INSTALLED THROUGH THE MANHOLE BASE AND THE TOP HALF REMOVED.



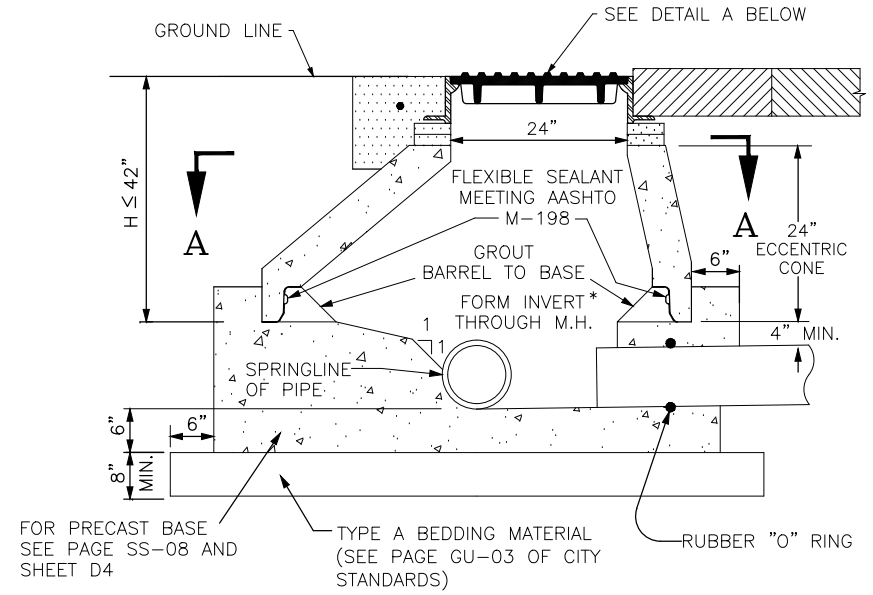
DETAIL A



INVERTS SHALL BE FORMED TO PROVIDE A 12" MIN. APPROACH IN LINE WITH EACH PIPE FOR MAINTENANCE EQUIPMENT.

SECTION A-A

ALL PRECAST MANHOLE SECTIONS SHALL CONFORM TO ASTM C-478 OR AASHTO M-199



NOTE: A FLAT LID SLAB MAY BE ALLOWED INSTEAD OF A CONE WHEN APPROVED BY THE CITY ENGINEER.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

STANDARD SHALLOW MANHOLE - CAST IN PLACE BASE

CITY STANDARD SANITARY SEWER DETAIL - PAGE SS-03

DESCRIPTION	DATE
REVISION △	
REVISION △	
REVISION △	
REVISION △	

DRAWN BY BCH DATE 03/20/18
DESIGNED BY BCH DATE 03/20/18
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SCALES: PLAN & PROFILE
HORIZONTAL: 1" = NA
NA NA NA NA
VERTICAL: 1" = NA
NA NA NA NA

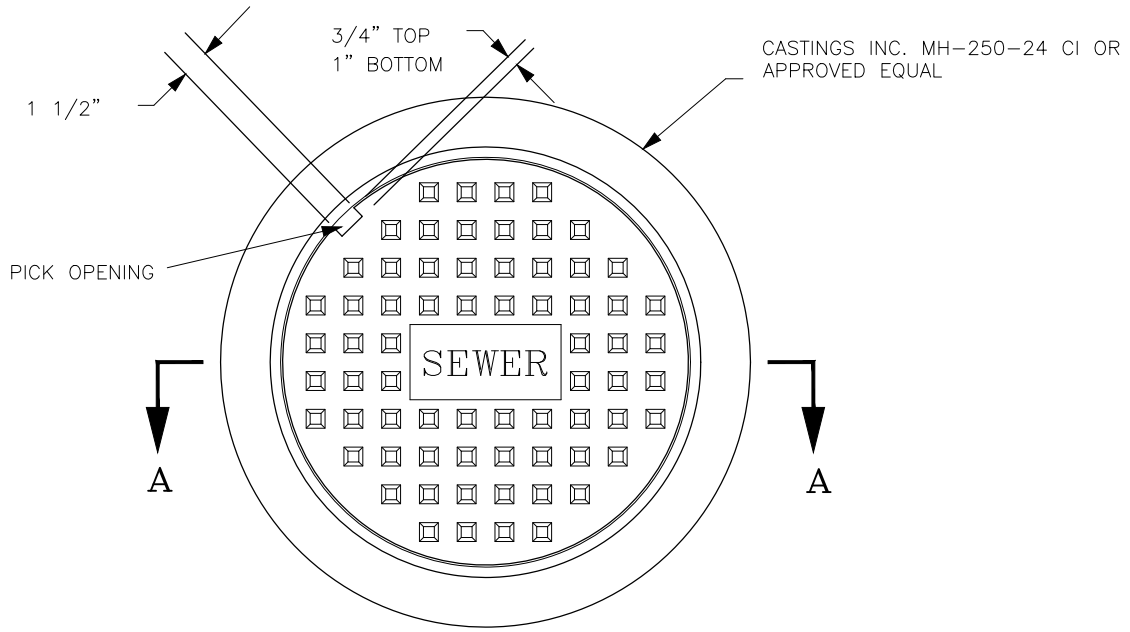
CITY OF Grand Junction COLORADO

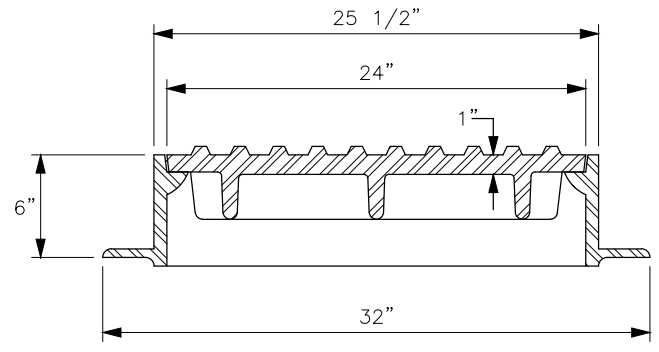
PUBLIC WORKS
ENGINEERING DIVISION

2018 SEWER LINE REPLACEMENTS - PHASE A
STANDARD SHALLOW MANHOLE AND DROP MANHOLE DETAIL

D2

PROJECT NO. 902-F001633





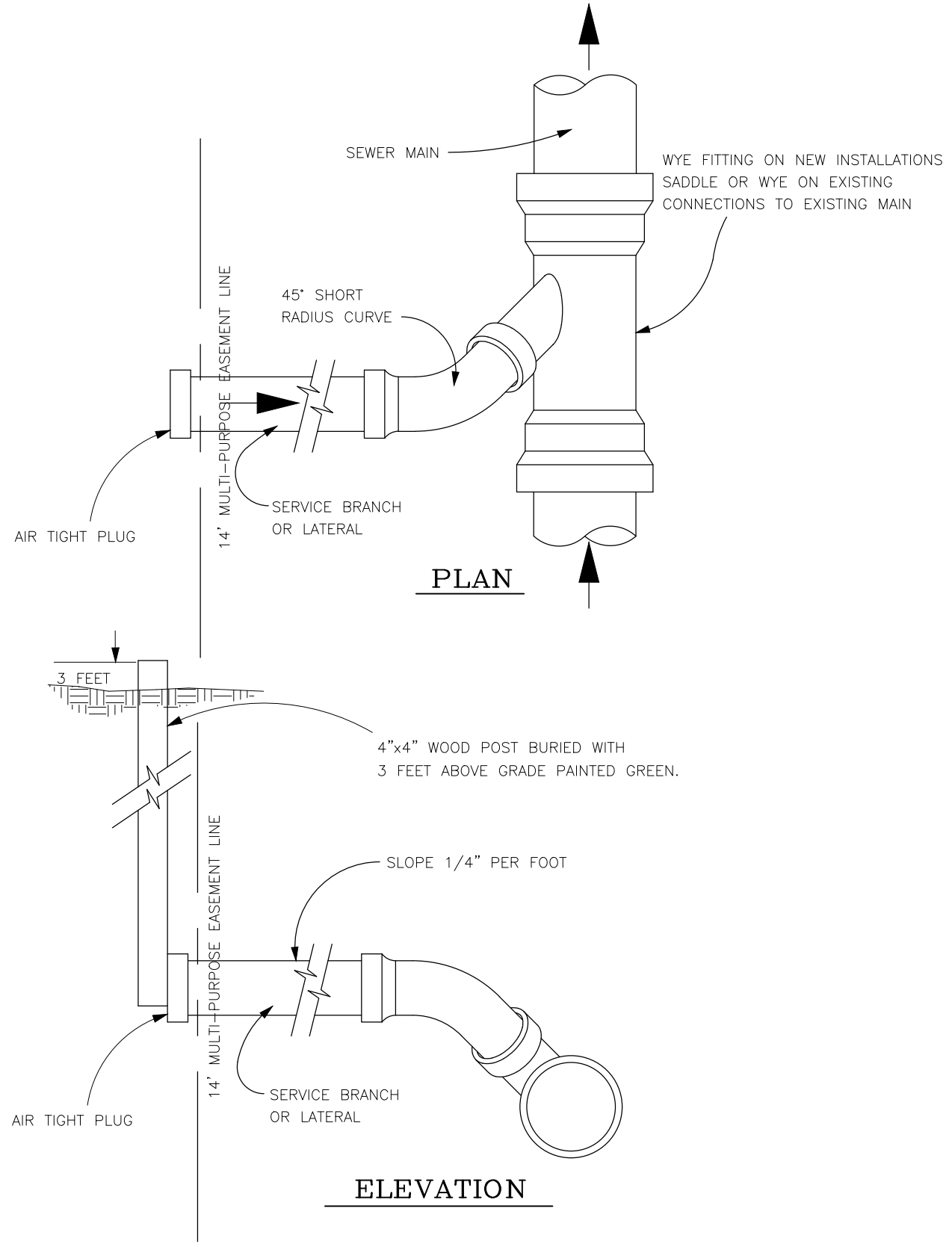
SECTION A-A

FOR MANHOLES LOCATED IN SIDEWALK OR OTHER PEDESTRIAN WAY USE CASTINGS INC. MH-150-24 AL OR APPROVED EQUAL (SEE DETAIL ON PAGE D-15 OF CITY STANDARDS).

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

STANDARD MANHOLE RING AND COVER

CITY STANDARD SANITARY SEWER DETAIL - PAGE SS-05



ELEVATION

TYPICAL SERVICE "Y" CONNECTION

CITY STANDARD SANITARY SEWER DETAIL - PAGE SS-06

DESCRIPTION	DATE
REVISION △	
REVISION △	
REVISION △	
REVISION △	

DRAWN BY BCH DATE 03/20/18
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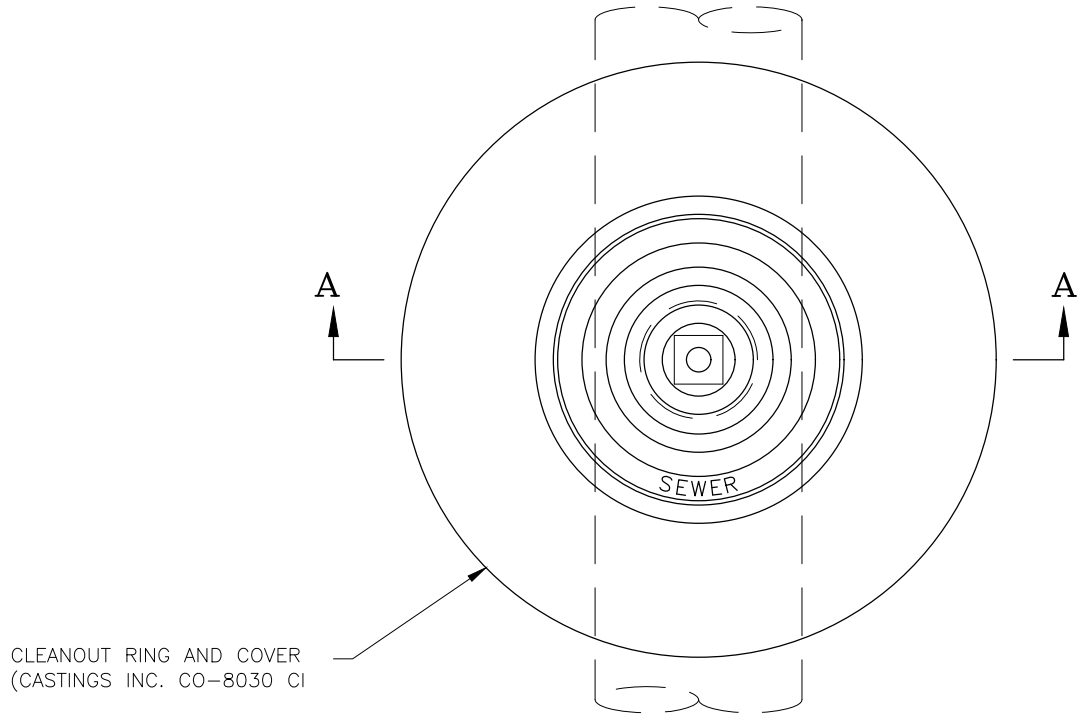
SCALES: PLAN & PROFILE
HORIZONTAL: 1" = NA
NA NA NA NA
VERTICAL: 1" = NA
NA NA NA NA

CITY OF Grand Junction COLORADO

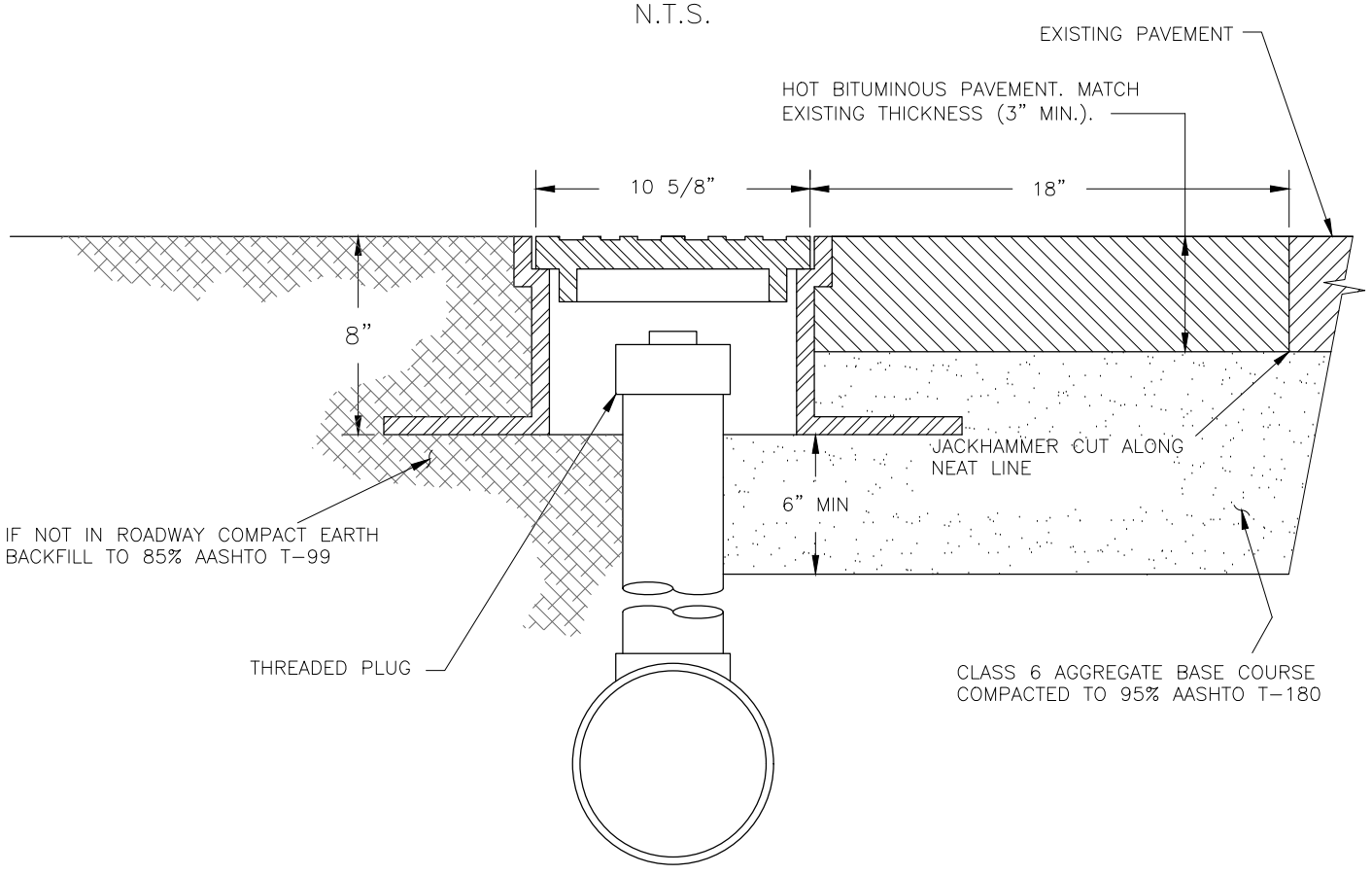
PUBLIC WORKS
ENGINEERING DIVISION

2018 SEWER LINE REPLACEMENTS - PHASE A
STANDARD MANHOLE RING AND COVER, AND
TYPICAL SERVICE "Y" CONNECTION

D3



PLAN
N.T.S.

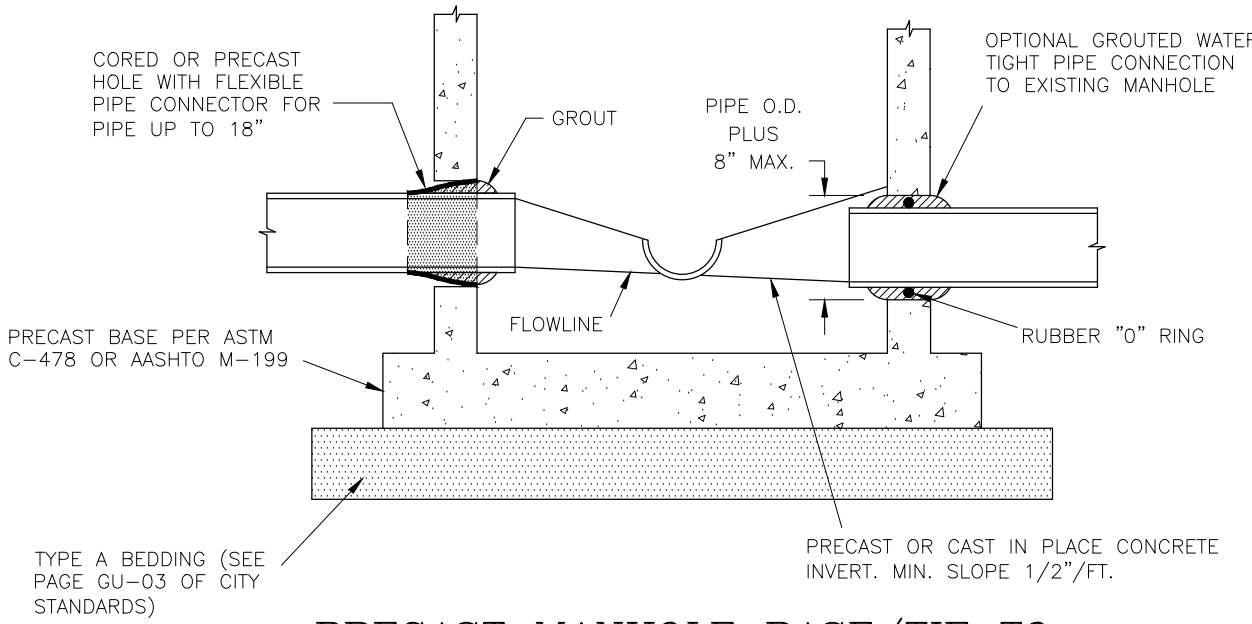


SECTION A-A
N.T.S.

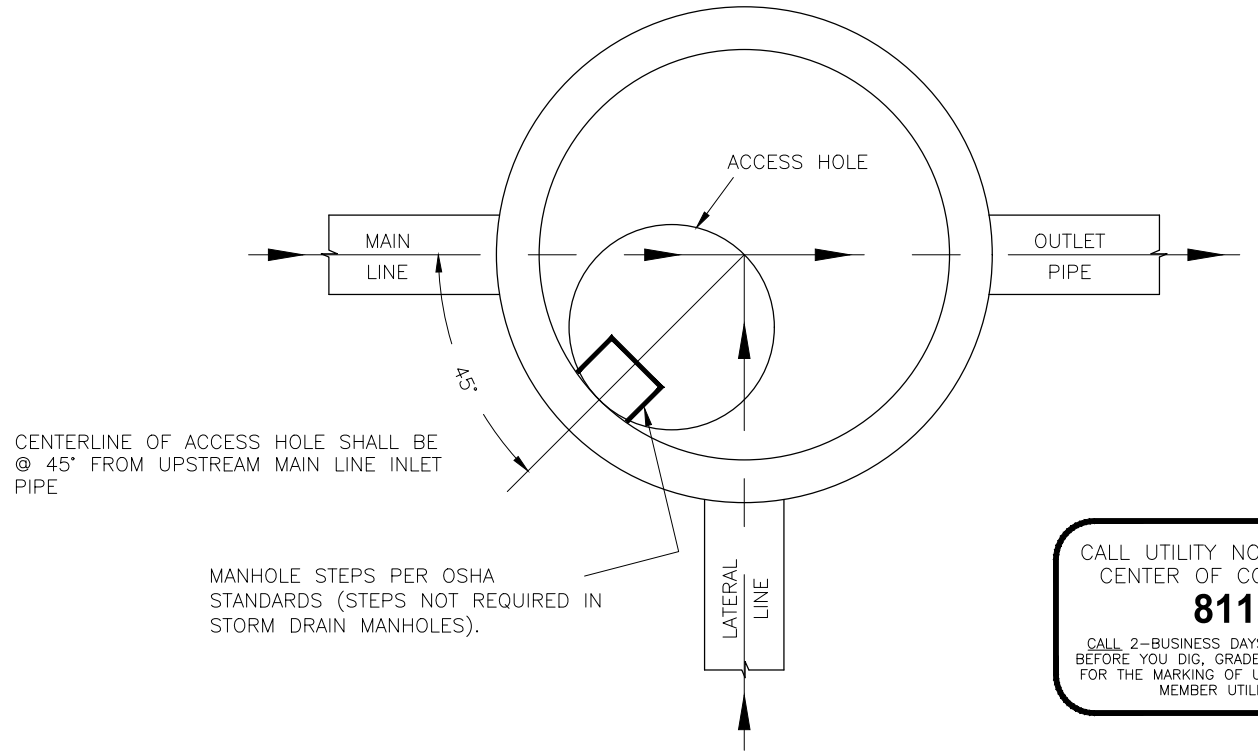
SEWER SERVICE CLEANOUT WITHIN RIGHT OF WAY DETAIL

CITY STANDARD SANITARY SEWER DETAIL - PAGE SS-07

GROUT FOR PIPE CONNECTIONS SHALL BE ALL-CRETE (5 OR 20 MINUTE SET) MANUFACTURED BY FOSROC INC. OR AN APPROVED SUBSTITUTE.



PRECAST MANHOLE BASE/TIE TO EXISTING MANHOLE WITHOUT BOOT



MANHOLE ACCESS LOCATION

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

PRECAST MANHOLE BASE, PIPE CONNECTIONS & ACCESS HOLE LOCATION

CITY STANDARD SANITARY SEWER DETAIL - PAGE SS-08

DESCRIPTION	DATE
REVISION △	
REVISION △	
REVISION △	
REVISION △	

DRAWN BY BCH DATE 03/20/18
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SCALES: PLAN & PROFILE
HORIZONTAL: 1" = NA
NA NA NA NA
VERTICAL: 1" = NA
NA NA NA NA

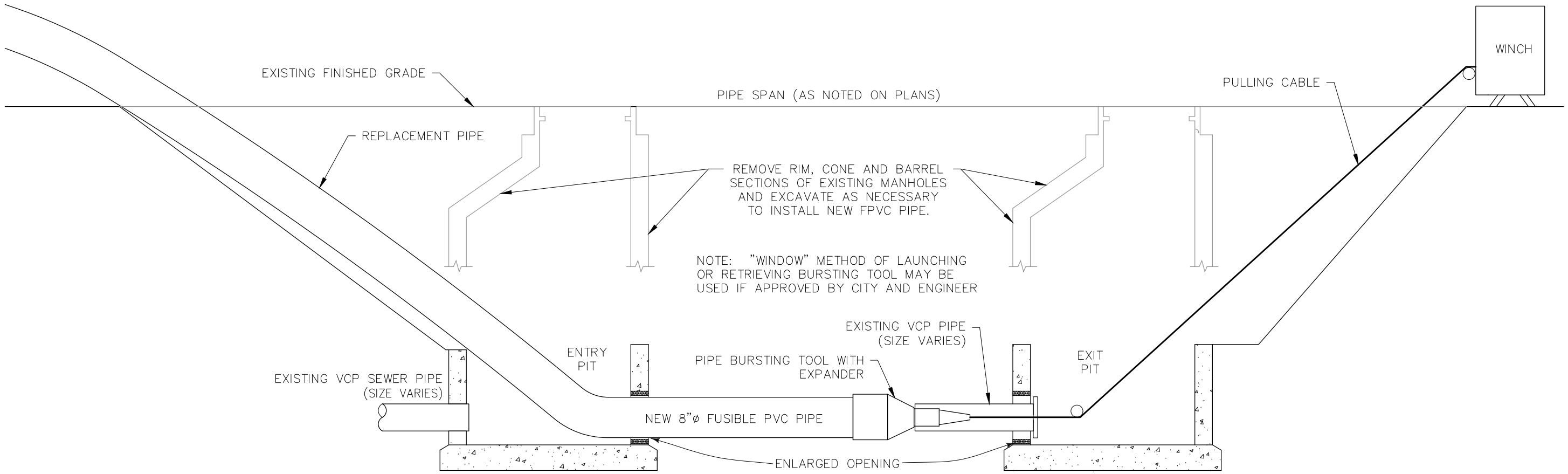
CITY OF Grand Junction COLORADO

PUBLIC WORKS
ENGINEERING DIVISION

2018 SEWER LINE REPLACEMENTS - PHASE A
SEWER SERVICE CLEANOUT AND
PRECAST MANHOLE BASE

D4

PROJECT NO. 902-F001633



NOTE:

CONTRACTOR SHALL MAINTAIN MINIMUM ALLOWABLE BENDING RADIUS FOR 8" FPVC PER MANUFACTURER RECOMMENDATIONS AT ALL TIMES DURING PIPE BURSTING OPERATIONS.

TYPICAL PIPE BURSTING SETUP

N.T.S.

CALL UTILITY NOTIFICATION CENTER OF COLORADO

811

CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

DESCRIPTION	DATE
REVISION △	–
REVISION △	–
REVISION △	–
REVISION △	–

DRAWN BY BCH DATE 03/20/18
DESIGNED BY BCH DATE 03/20/18
CHECKED BY ALC DATE
APPROVED BY ALC DATE

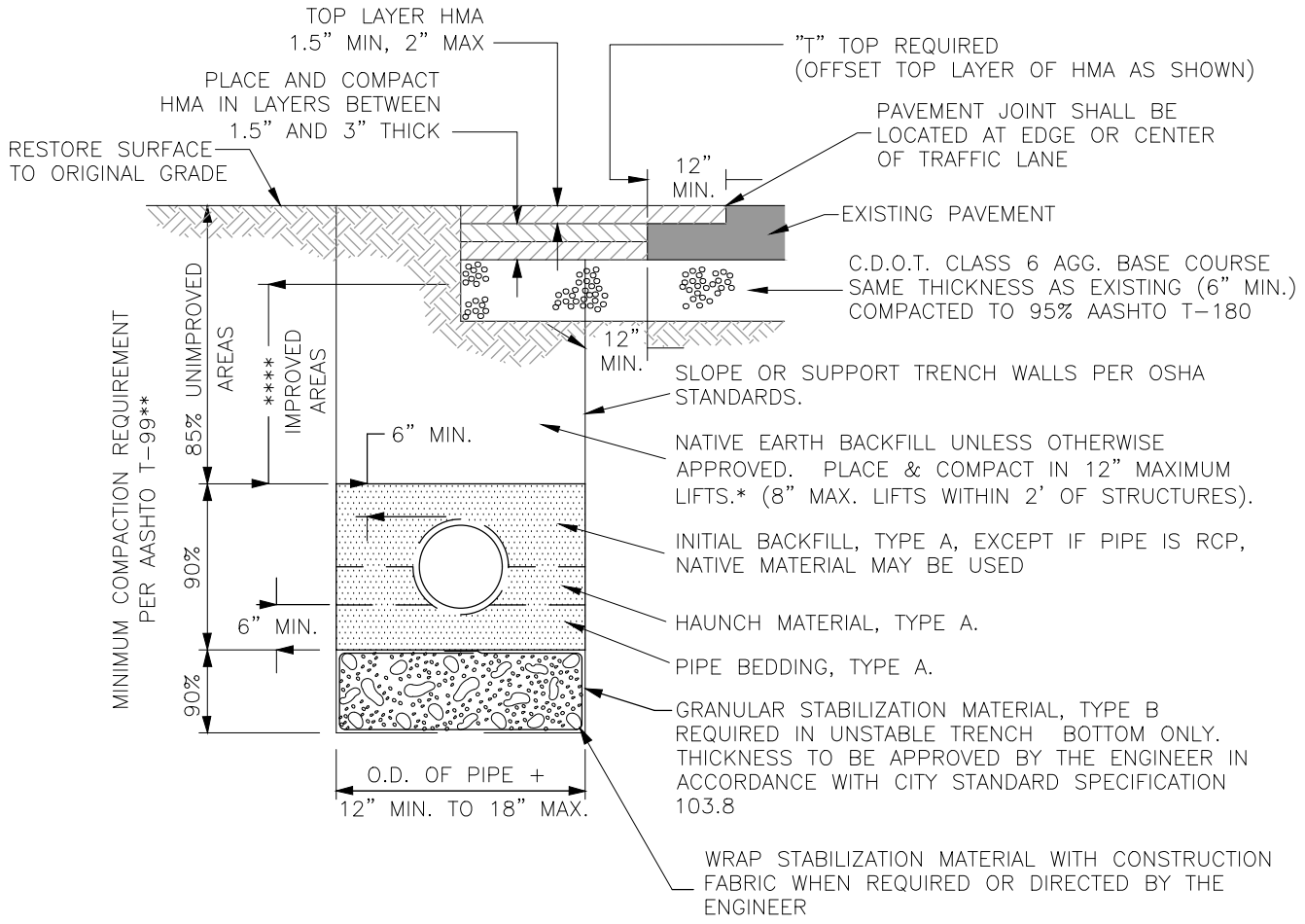
SCALES: PLAN & PROFILE
HORIZONTAL: 1" = NA
NA NA NA NA
VERTICAL: 1" = NA
NA NA NA NA

CITY OF Grand Junction COLORADO

PUBLIC WORKS
ENGINEERING DIVISION

2018 SEWER LINE REPLACEMENTS – PHASE A
PIPE BURSTING DETAILS

D5



	MAXIMUM PERCENT BY WEIGHT PASSING SQUARE MESH SIEVES		
SIEVE SIZE	PIPE BEDDING, HAUNCH & INITIAL BACKFILL MATERIAL (CRUSHED ROCK, TYPE A)	GRANULAR STABILIZATION MATERIAL (SCREENED OR CRUSHED ROCK, TYPE B)	IMPORTED BACKFILL MATERIAL (USE ONLY WHERE SPECIFIED OR DIRECTED BY THE ENGINEER
12 INCH	---	---	100
2 INCH	---	100	---
1 INCH	100	---	---
NO 4	---	15 MAX	---
NO 200	20 MAX ***	---	3% – 20% ***

* 24" COMPACTED BACKFILL REQUIRED OVER ALL PLASTIC PIPE PRIOR TO VEHICLE OR HEAVY EQUIPMENT LOADING.

** COMPACT PER AASHTO T-180 WHEN SPECIFIED, DIRECTED OR APPROVED BY THE ENGINEER.

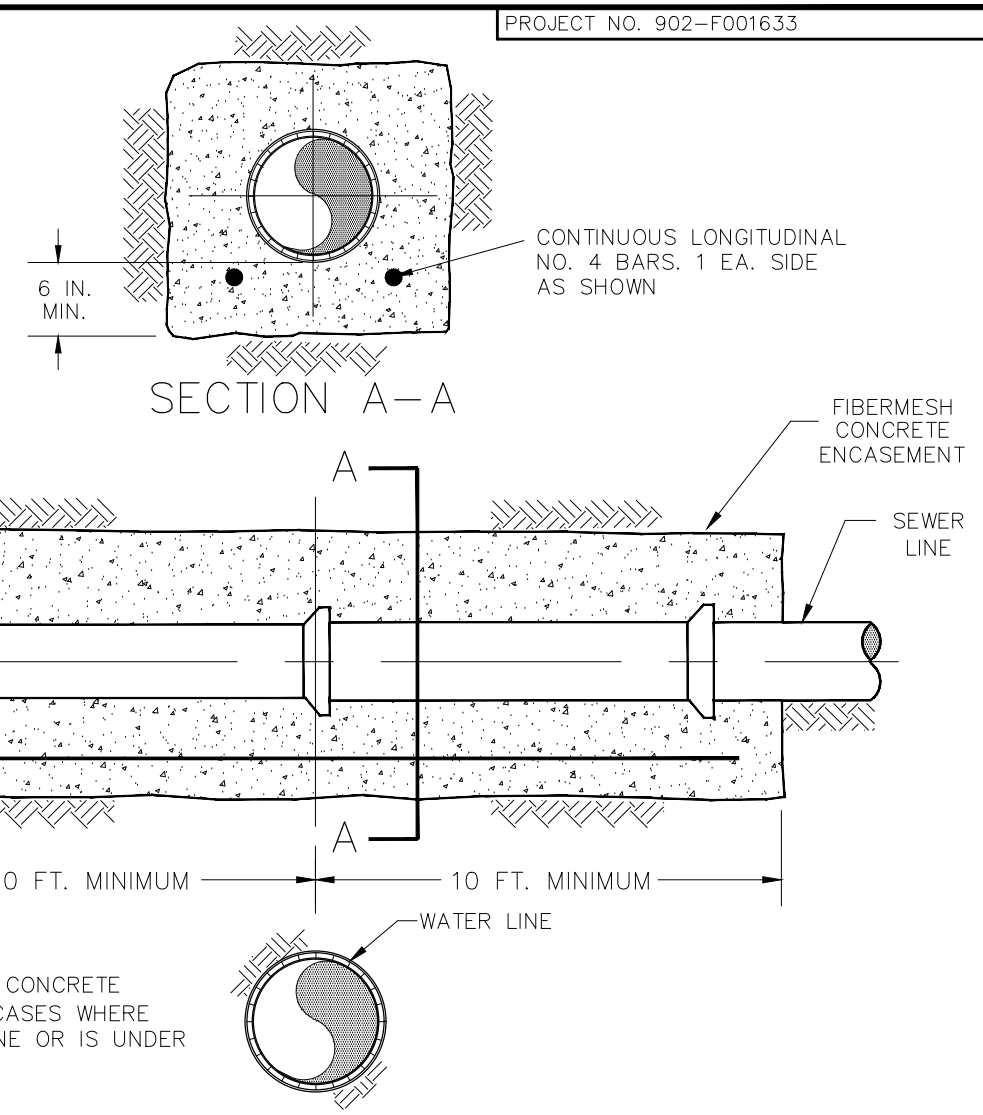
*** PLASTIC INDEX (PI) SHALL NOT BE MORE THAN 7.

**** TRENCH BACKFILL UNDER ASPHALT OR CONCRETE PAVEMENT SHALL BE COMPACTED PER SECTION 103.14 AND TABLE 101 IN THE SSFUU (STANDARD SPECIFICATIONS FOR UNDERGROUND UTILITIES).

ALL BACKFILL MATERIAL SHALL BE UNIFORMLY ADJUSTED TO WITHIN 2% OF THE OPTIMUM MOISTURE CONTENT PRIOR TO PLACEMENT AND COMPACTION.

TYPICAL TRENCH DETAIL

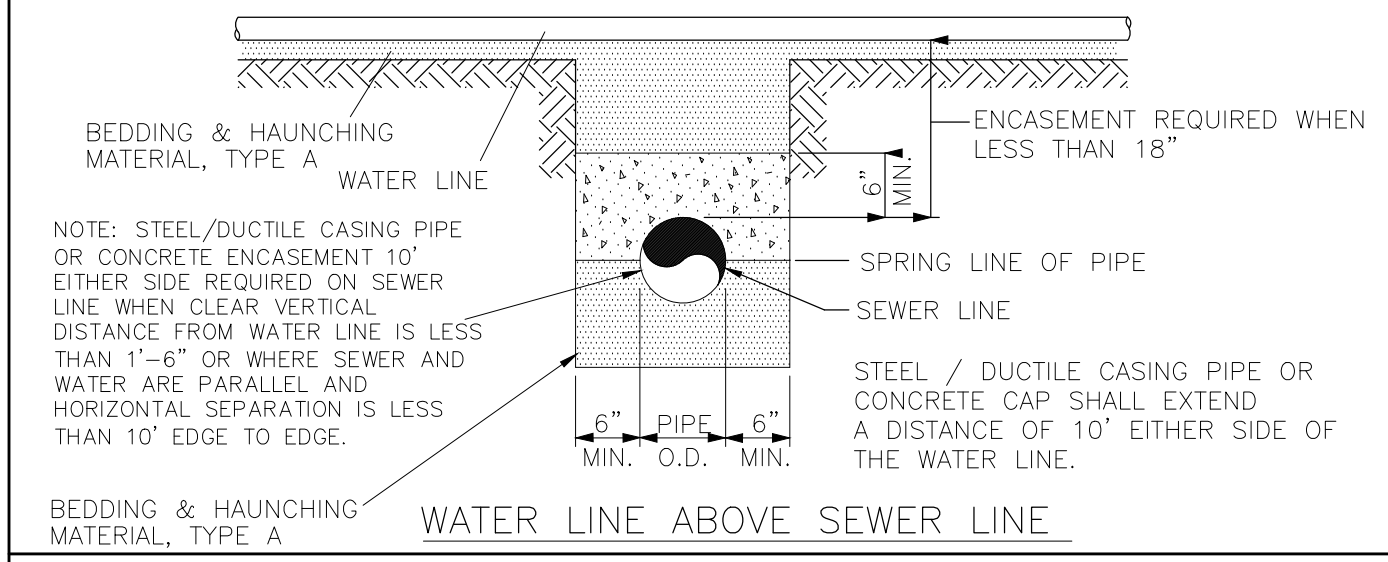
DEPARTMENT OF PUBLIC WORKS AND PLANNING ENGINEERING DIVISION CITY OF GRAND JUNCTION, COLORADO	GENERAL UTILITY DETAIL	APPROVED: DN REVISED: FEB. 2007 DRAWN: TLT	PAGE GU-03



SECTION A–A

STEEL/DUCTILE CASING PIPE OR CONCRETE ENCASEMENT REQUIRED IN ALL CASES WHERE SEWER LINE IS ABOVE WATER LINE OR IS UNDER WATERWAY CROSSING.

WATER LINE BELOW SEWER LINE



WATER LINE ABOVE SEWER LINE

TYPICAL WATER AND SEWER LINE CROSSINGS

DEPARTMENT OF PUBLIC WORKS AND PLANNING ENGINEERING DIVISION CITY OF GRAND JUNCTION, COLORADO	GENERAL UTILITY DETAIL	APPROVED: DN DATE: FEB. 2005 DRAWN: TCP/DPW	PAGE GU-04

DESCRIPTION	DATE
REVISION △	
REVISION △	
REVISION △	
REVISION △	

DRAWN BY BCH DATE 03/20/18
DESIGNED BY BCH DATE 03/20/18
CHECKED BY ALC DATE
APPROVED BY ALC DATE

SCALES: PLAN & PROFILE
HORIZONTAL: 1" = NA
NA NA NA NA
VERTICAL: 1" = NA
NA NA NA NA

CITY OF Grand Junction COLORADO

PUBLIC WORKS
ENGINEERING DIVISION

2018 SEWER LINE REPLACEMENTS – PHASE A
GENERAL UTILITY DETAILS

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